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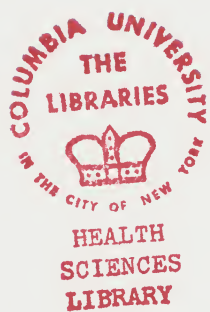
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A Proud Heritage

*An Informal History of Surgery
at Columbia*



THE JOHN JONES SURGICAL SOCIETY



A. P. Smith

of the State of New York

in the County of Albany



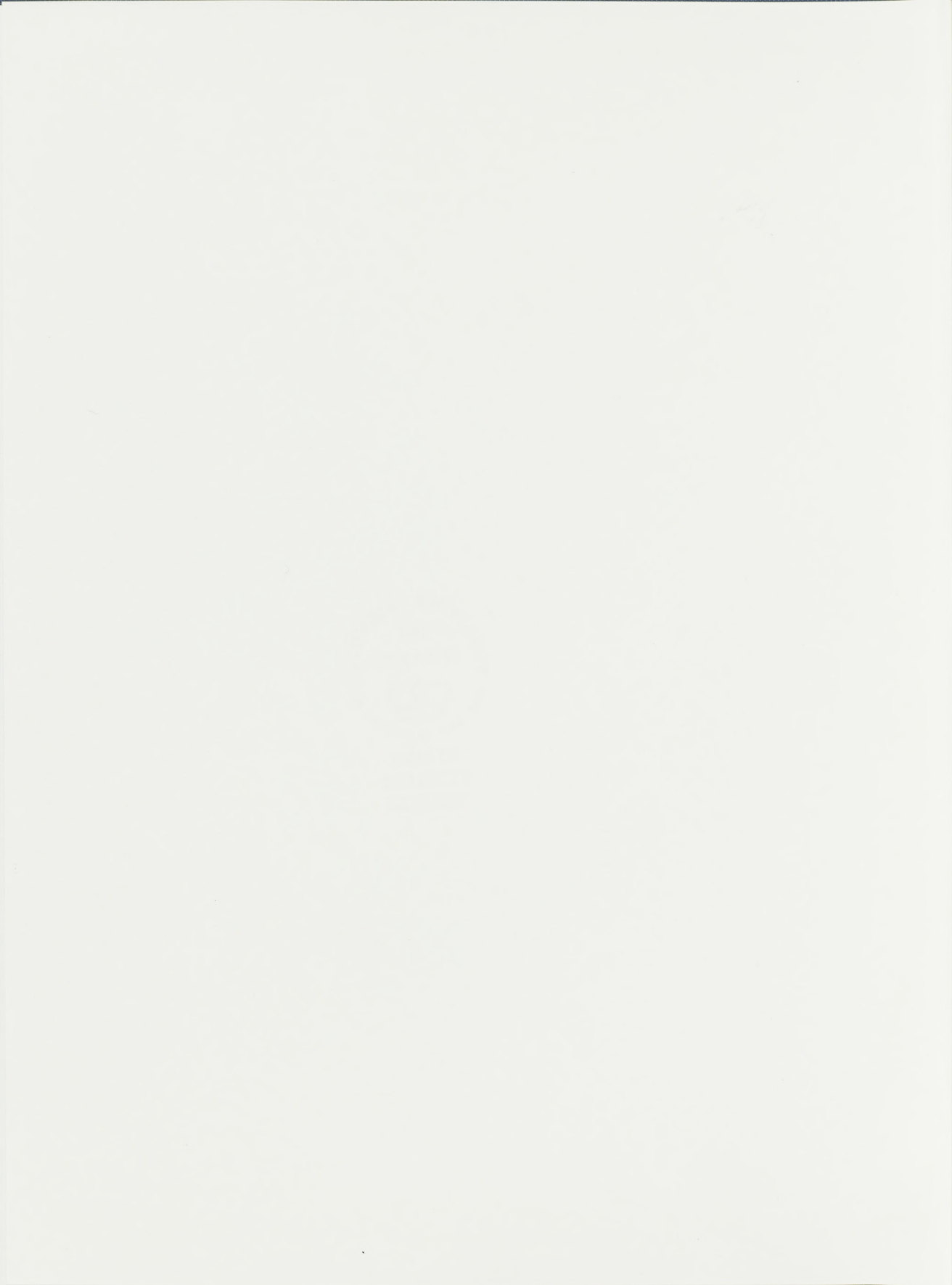
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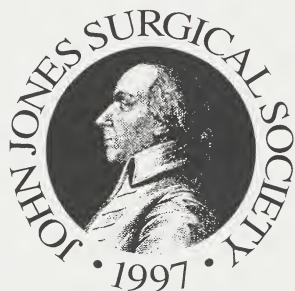
of the State of New York

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A Proud Heritage

An Informal History of Surgery at Columbia



THE JOHN JONES SURGICAL SOCIETY

Frederic P. Herter

EDITORS

Alfred Jaretzki III

Frederic P. Herter, M.D. & Alfred Jaretzki III, M.D.

ASSOCIATE EDITOR

Kenneth A. Forde

Kenneth A. Forde, M.D.

CONTRIBUTORS

Alfred M. Markowitz, M.D.

Kenneth M. Steinglass, M.D.

Philip D. Wiedel, M.D.

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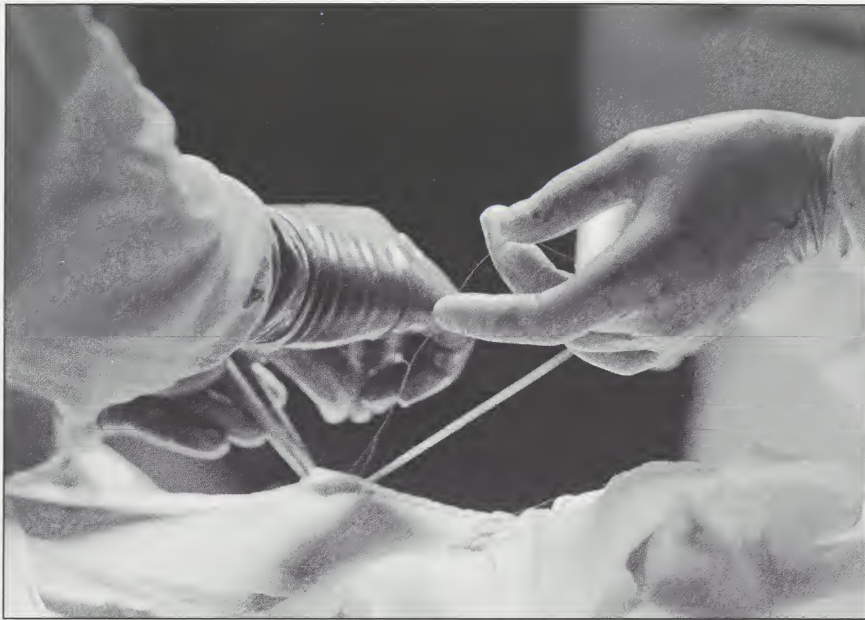
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We owe deep gratitude to Trisha Jewellen Hargaden, Assistant to Dr. Kenneth A. Forde, for having undertaken many scheduling and housekeeping chores for the John Jones Society, but particularly for her tireless work in collecting and cataloguing the photographs to be used in the book. It has been a confusing and difficult task, and she has done it well. Thanks go to Deborah Schwarz-McGregor, Director of External Affairs, Department of Surgery; Stephen E. Novak and Henry Blanco, Archives and Special Collections, Columbia University Health Sciences Library; Constance H. Halpern and Charles E. Manley, Columbia University, Center for Biomedical Communications; Joan Penn and Kathleen Thompson, Presbyterian Hospital, Public Affairs Office; and Katherine Couchells, The Association of the Alumni College of Physicians and Surgeons of Columbia University, for having searched for and provided appropriate photographic material, and the numerous alumni who contributed personal photographs.

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*"Surgery is an art which teacheth the way by reason,
how by the operation of the hand we may cure,
prevent and mitigate diseases, which accidentally happen upon us."*

Ambroise Paré
c.1510-1590

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Introduction

John Jones, the first professor of surgery at King's College (Columbia's antecedent) was unknown to many of us until recently. Somehow we survived the better part of our professional lives within the embrace of the College of Physicians and Surgeons (P&S) and Presbyterian Hospital (PH) without hearing one word about him. So we must be grateful to historians Dr. Eric Rose and Dr. Ken Forde, who have resurrected John Jones from our past. He was our first chief, he wrote the first surgical textbook in this country, and his preeminence as a surgeon in the pre-Revolutionary period is well documented. It is fitting therefore that his name be given to the newly established John Jones Surgical Society in the Department of Surgery at Columbia University's P&S, and that particular attention be accorded him in this book. His importance to the Department, the University, and the profession of surgery is incalculable.

Our immediate interest, however, centers on the 20th century, and the ensuing chapters will dwell on territory with which we are personally familiar to one degree or another. But even here reference material can be difficult to find, and few remain to tell us first-hand about the early Whipple years, or the critical bonding of P&S and Presbyterian Hospital in 1928, when the presently constituted Columbia Presbyterian Medical Center (CPMC) first opened its doors. Until his death in January 2002, George Humphreys constituted our principal source of reliable departmental history. His memory was exceptional, and his memoirs, covering eight "Rabbits" (or 96 years) of his professional life, are used liberally in this account. (Every Chinese year has a designated animal symbol, which recurs at 12-year intervals. Humphreys' birth fell on a Rabbit year, and because of his ties to China, he chose to use the Rabbit 12-year marker rather than the decade in structuring his memoirs.)

The last 50 years have seen unimaginable changes in the theory and practice of surgery. Much of what transpires today is beyond my grasp, and it has been difficult for me to abandon that which I once considered axiomatic or to concede that the patient is better managed today than yesterday. Is the new crop of surgeons more skilled than that of my vintage? Better trained? More highly motivated? I think not. But they have new science at their command and technology so

sophisticated that almost nothing is beyond reach in terms of diagnosis and treatment. The patient is better off, by far, if we judge by results.

Looking back to my decade of training (1944-1954), I am appalled at the archaic state of surgery that then existed. Can you imagine instructing a herniorrhaphy patient to remain in bed for a week or ten days after surgery? Or being put to sleep with open-drop ether? Little was known of water and electrolyte balance and we saw more than a few instances of congestive heart failure from excessive salt administration in the operating room. Hydration of the patient was frequently maintained by hyperdermoclysis (or subcutaneous infusion of fluid), a procedure unheard of today. Rapid determinations by flame photometer of sodium, potassium, and chloride concentrations in the blood were just being introduced. Hypercalcemia went unrecognized and on occasion was lethal. Blood for transfusion was administered by tubing from an open-mouthed Ehrlenmeyer flask perched precariously on a wooden tripod, with an inverted Dixie cup capping the flask to keep the bacteria out, a truly antediluvian arrangement.

2

A happier image is that of George Humphreys, in his pre-chairmanship days, preparing for New York's first patent ductus ligation. But open-heart surgery was not yet in sight. Chest surgical training consisted largely of doing thoracoplasties for tuberculosis. Transplantation, except for skin, was restricted to the science-fiction literature. Peptic ulcer disease was treated surgically (I performed more gastrectomies than appendectomies during my residency), and breast cancer patients were invariably subjected to the five-hour Halsted-Haagensen radical mastectomy. Radiation therapy was delivered via 250 KV instruments or embedded radon needles and seeds—chemotherapy was yet to be. And peripheral vascular insufficiency was treated by lumbar sympathectomy, if not amputation. Antibiotic therapy was in its infancy (sulfa preparations predominated as penicillin was in short supply) and infection remained a matter of continuing concern.

But if our science was primitive compared with today's, it mattered not—we were totally consumed with the hands-on process of becoming surgeons, and a helicopter heading for the hospital with a donor heart could not have added to our excitement. We were intensely alive and happy.

Most histories of surgical departments, this one included, deal with heroes, and characters, and training programs, with change and discovery. But we must add one other dimension, as important as the fine training we received, namely the joy we all experienced in

working on the Surgical Service at Presbyterian Hospital. It was a very special environment, distinct from that existing at many other sister institutions, and it stemmed largely from the character and quality of our teachers. They were not all great surgeons, to be sure, but with rare exception they were decent and caring and committed to professional excellence, driven more by the needs of the patient and the institution than their level of income or their place on the academic ladder. And they demanded of us the same level of commitment. It was inevitable that some of this idealism should rub off on us. We became better doctors as we gained proficiency in the operating room, and we were proud to be part of such a team. As an intern in 1944, I thought of my \$63 monthly paycheck as a privilege.

We were nurtured well in our years of training. Teaching was never by rote—our teachers were many and each had his own singular *modus operandi* at the bedside or in the operating room. This prepared us well for the real world of surgery. We learned that there was more than one way of doing things, and as senior residents we were expected to be able to defend our choice among treatment options. The occasional mistakes and misjudgments of others, as well as our own, were conceded and discussed in open forum.

3


The atmosphere in which we worked was a warmly collegial one; we were with friends, not competitors, and there was a willingness to help one another out, overworked and underslept as we were. We labored together, we shared the same dreams, and despite the challenging and demanding nature of our work, we took joy from it. I don't recall a happier time in my young life. I had a love affair with Presbyterian Hospital and its Surgical Service, and my heart beat faster each morning as I made my way up 168th Street. The passion faded some as life at the hospital gradually became more complex and regulated, but it has never left me. I can only hope that this short history will rekindle the same sentiments in others.

—Frederic P. Herter

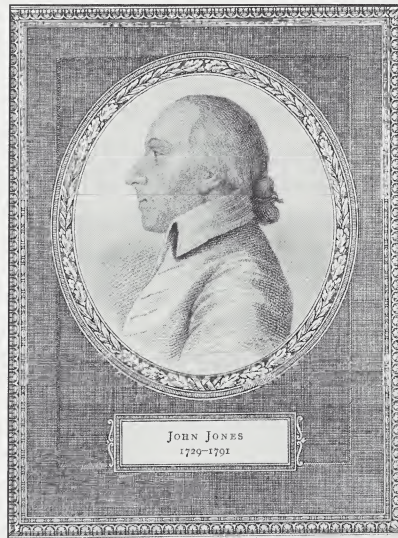
*Columbia Presbyterian
Medical Center*

I N S T I T U T I O N A L T I M E L I N E

- 1754** King's College, chartered by George III, was founded in New York City.
- 1765** The first medical subject (anatomy) was introduced into the curriculum by Dr. Samuel Classy. Plans for a new medical school were begun by Dr. Samuel Bard, Dr. John Jones, and Dr. Classy.
- 1767** The Medical School of King's College opened. John Jones appointed its first Professor of Surgery.
- 1771** The New York Hospital, situated in lower Manhattan, was founded by Drs. Bard and Jones. This was the first teaching hospital in New York, and unquestionably the finest, until the late 19th century.
- 1776** The Revolution began. King's College and its Medical School closed for eight years.
- 1784** King's College and its Medical School reopened, with the new designations as Columbia College and the Medical School of Columbia College. Shortly afterward, the Hospital suffered a devastating fire requiring extensive rebuilding. It did not receive patients again until 1791.
- 1807** The College of Physicians and Surgeons, an independent proprietary medical school, was founded, and rapidly gained favor over its rival, Columbia.
- 1813** The Medical School of Columbia College dissolved, and its faculty was absorbed by the College of Physicians and Surgeons. Columbia College continued to grow and prosper during the next 80 years despite the loss of its medical component.

- 
- 1868** The Presbyterian Hospital was founded by James Lenox and opened in 1872. Its denominational identity quickly changed as it accepted all patients without regard to religion or ability to pay.
- 1891** The College of Physicians and Surgeons became fully integrated with Columbia College, thus conferring university status on the College, and in return receiving sizeable financial support from the University.
- 1911** Plans for the integration of Presbyterian Hospital with Columbia's College of Physicians and Surgeons began, and negotiations over the site for the new medical center and its financing continued for several years.
- 1928** The Columbia Presbyterian Medical Center (CPMC) opened at its present site on 168th Street.
- 1998** The Columbia Presbyterian Medical Center and Cornell's New York Hospital, the two largest and most prominent academic medical centers in the city, joined hands, giving birth to the New York-Presbyterian Hospital.

*The Father of American
Surgery:
John Jones (1729-1791)*



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The world of medicine that confronted John Jones at the beginning of his career was primitive at best. Although theories abounded, there was no true understanding of the nature of disease, and medical treatment was directed largely to the relief of symptoms. The repertoire of the average surgeon was also severely limited. Control of hemorrhage, emergency care of the injured or wounded, drainage of abscesses, amputation, and lithotomy for bladder calculi constituted the short list of procedures Jones was taught to perform. Body cavities were rarely, if ever, entered, for fear of sepsis. Because of the absence of any form of anesthesia, speed was vital in most surgical interventions. Surgeons were rated on the basis of how quickly they could remove a bladder stone.

Matters of simple hygiene, such as cleanliness, adequate ventilation, and proper disposal of sewage, were virtually unrecognized. Overcrowding in the cities invited contagion. Raw sewage all too

frequently created fetid cesspools in public places. Hospitals were few in number at the turn of the century—Charity in New Orleans (1736), Pennsylvania (1752), New York Hospital (1776), Bellevue (1794)—but far from being sanctuaries for the ill, they proved the opposite. Surgical wards were described as veritable “forcing houses” for sepsis. Infection spread relentlessly from patient to patient and simple wounds more often than not became abscessed, leading to gangrene, amputation, and, frequently, death. Erysipelas, pyemia, septicemia and gangrene were the four principal “*hospital*” diseases.

Sir James Simpson reported that one out of 2.4 patients undergoing amputation in large metropolitan hospitals in England died post-operatively, whereas in private clinics or the county, only one out of 9.2 patients undergoing the same surgery died. The difference, of course, was sepsis. Wounds treated in the city hospitals rarely healed by “primary intention”—suppuration was the rule. Some doctors even thought that pus was necessary for healing (“laudable pus”), some closed their wounds tightly, some left the wounds wide open, and others left in drains. Instruments were used repeatedly without cleaning, and surgeons took pride in the matted filth on their operating vests. Contentious as were the theories governing the treatment of wounds, most practitioners seemed to agree that sepsis, that *bête noire* of surgery, was favored by lack of ventilation, by overcrowding in the hospitals, by dirt, and by proximity to other patients with infected wounds. These considerations formed the basis for Jones’ timely recommendations about hygienic measures in the Appendix of his 1775 treatise on the hospital care of the military wounded.

Medical standards, such as existed, were under lax control and there was virtually no systematic qualification process for surgeons. In the time of Henry VIII (1509-1547), the existing Guild of Surgeons in England merged with the Barber’s Company to form the United Barber Surgeons Company, and for nearly 300 years, this quasi-professional organization exerted some control over the quality and activities of its members. In 1745, the Guild broke away and in 1800 founded the Royal College of Surgeons, whose counterpart in medicine had existed for some years. But despite the elegant title of the new College, surgeons continued to have a difficult time distancing themselves from their barber origins, and to this day are not addressed as doctors in some British circles.

The Medical and Surgical Colleges in England could issue licenses for practitioners, but there were numerous other ways in which a doctor could become legitimized. In the colonies, the system

was equally porous, and the licensing laws, devised to ensure some standards of competence among doctors, were left to the individual states. This decentralized form of control still exists today.

Massachusetts passed the first such law in 1649, and others followed, but it wasn't until the late 19th century that licensing and practice came under reasonable supervision. Even then, breaches occurred. As recently as 1940 there existed a Massachusetts-approved "P&S" Medical School in a brownstone in Boston that was of such poor quality that other states refused to accept Massachusetts medical licensure as qualification for practice.

The Medical School of King's College, founded in 1767, was the first chartered medical school in the New World, and the first to award a Doctorate in Medicine (1770).

The most daunting challenge facing the would-be doctor in Jones' time was that of obtaining a proper education. Before 1800, the only medical schools of note in the colonies were Philadelphia (1765), the Medical School of King's College (1767), and Harvard (1782). A fourth, Dartmouth (1789) had only one professor for the first several years. The quality of the teaching at these institutions was hardly competitive with that of the major universities of Europe, and medical degrees were limited to a precious few. For almost a century to come, Europe remained the chosen site for obtaining a medical degree, or at least supplementing the apprenticeship obtained in this country. But this took money, and of the estimated 3,500 doctors in the colonies, only 10 percent were fortunate enough to have studied abroad, and only 100 had a degree (Bachelor or Doctor of Medicine). The remainder learned their trade *solely* as apprentices to established practitioners, most of whom were European-trained. The results, depending as they did on both the motivation and qualification of the teacher and the relationship that developed between mentor and student, were widely variable.

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"The Best and Earliest Lessons of My Life"

John Jones was among the fortunate. Born in Jamaica, Long Island in 1729 to a well-to-do family of Welsh ancestry, Jones grew up imbued with medicine—his father and grandfather were both distinguished physicians. At the age of 15, following a private school education, he was apprenticed to his cousin, Thomas Cadwalader, a prominent European-trained physician in Philadelphia. Jones served in that capacity for three years (the usual period of servitude as an

apprentice was five to seven years), and that period he later called, “both in physic and morals—the best and earliest lessons of my life.” His father then sent him to Europe, where he studied under the renowned Hunter brothers in London (John, the anatomist, and William, the obstetrician) and the distinguished surgeons Percival Pott and Colin MacKenzie at St. Bartholomew’s Hospital. Jones’ formal education in medicine was at the University of Rheims, from which he earned his M.D. degree in 1751. His graduation thesis, “Observation on Wounds,” would later be amplified in his famous 1775 surgical text, published in America. After graduation, Jones toured Europe, visiting notable surgeons including Le Cat, a lithotomist at Rouen, and Jean-Louis Petit and Henri Francoise Le Dran, both Parisian surgeons and lithotomists (a lithotomist was one who removed stones from the urinary bladder, colloquially called “cutting for the stone”).

Jones’ education, which combined the “hands-on” experience of an apprentice with the more theoretical aspects of medicine developed at centers of learning in Europe, was exceptional and restricted to a privileged few. Most of his colleagues in America, by contrast, were apprentice-trained only, and the quality of that education depended primarily on the teaching of the master and to a lesser extent on the composition of the master’s medical library. At the end of the indenture, the apprentice traditionally was given a certificate of service written and signed by the master, allowing the recipient thenceforth to be called “physician.” He was also rewarded with a small medical library of his own and a set of pocket instruments. This was hardly a propitious beginning, and with further university or hospital training largely inaccessible at that time, many individuals entered practice by using their limited medical and surgical skills on unsuspecting patients, often derelicts in almshouses.

After returning to New York in 1753 Jones worked with Dr. John Bard, a prominent surgical practitioner whose brother, Samuel Bard, was later to become Professor of Medicine at the Medical School of Columbia College. Jones quickly gained recognition as a skilled technician. It was claimed that he could remove a stone from the bladder in little more than a minute.

The French and Indian War was then in its terminal phases, and Jones joined the British and Colonial forces as a volunteer, anxious to expand his experience in treating traumatic wounds. At the critical battle against the French at Fort Edward (close to Saratoga), Baron d’Escoux, the general in charge of the French forces, was severely wounded, and lay dying on the battlefield. Jones, whose studies abroad

had left him fluent in French, was asked to aid in his care. Four musket ball wounds were tended to by Jones—three healed kindly, while the last left d'Escoux with a vesical fistula, from which he eventually recovered. His gratitude to the American surgeon was great. Jones' reputation soared following such a dramatic show of skill under fire.

King's College Medical School

Perhaps as a consequence of heroism, Jones was given a teaching appointment at King's College in 1765. There he joined with Dr. Samuel Bard and the anatomist Dr. Samuel Classy in planning a medical school. Like Jones, Bard had studied under the Hunters in London, where he befriended two students, John Morgan and William Shippen, who talked of founding a medical school at the College of Philadelphia. Undoubtedly their enthusiasm engendered the same ambitions in Bard, for he returned from London fired up by the possibility of such a development at King's College. His dream shortly became reality—the trio of Bard, Jones and Classy developed a formal proposal bearing their names and presented it to the Governors of the College in 1767. In April of that year it was approved and a

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Kings College 1767 – 1776, 18 Park Place (formerly Robinson Street).

PLAIN CONCISE
PRACTICAL REMARKS
ON THE TREATMENT OF
WOUNDS AND FRACTURES;
TO WHICH IS ADDED, A SHORT
A P P E N D I X
ON
CAMP AND MILITARY HOSPITALS;
PRINCIPALLY
Designed for the Use of young MILITARY SURGEONS,
in NORTH-AMERICA.

By JOHN JONES, M. D.
Professor of Surgery in King's College, New York.

NEW-YORK:
Printed by JOHN HOLT, in Water-Street, near the
Coffee-House.

John Jones' first textbook, A Discourse Upon the Duties of a Physician, (1769) with some sentiments on the usefulness and necessity of a public hospital.

royal charter from King George III was granted. The Medical School of King's College thus became the first *chartered* medical school in the colonies, but not the first medical institution; two years before, in 1765, Morgan and Shippen founded the Medical School of the College of Philadelphia (the forerunner of the University of Pennsylvania). The latter was not a chartered school, nor did it award Doctorates in Medicine until the King's College Medical School already had done so.

King's College and its new medical school were located in lower Manhattan near Trinity Church. The six professorial appointments in medicine were John Jones (surgery); Samuel Classy (anatomy); Peter Middleton (physiology and pathology); James Smith (chemistry and materia medica); Samuel Bard (theory and practice of physic); and John V. B. Tennant (midwifery). A stone slab with these names engraved on it now stands outside the Dean's office in the College of Physicians and Surgeons.

Jones' initial course at the Medical School was entitled "The Theory of Chirurgerie with a Course of Operations upon the Human Body." His introductory lecture, in November of 1767, was prophetic in its offering of a new view of the surgical profession:

If the science of surgery requires so much pains and labour, how unjust and inadequate must the ideas of those people be, who would reduce it to the area of operating alone. This area is without doubt very essential to it, and it is the operation which principally characterises it—but the area of operating, considered in itself, depends chiefly upon anatomical knowledge, and address of the hands—practice indeed gives this address, in a great measure, but it does not bestow genius, nor the lights which are necessary to conduct it. Those therefore who estimate surgery by operation alone, and believe that nothing but long habit and practice is necessary to form the great surgeon, are grossly ignorant of the art; and those surgeons who found their only merit upon this experience, degrade themselves and their profession; the greatest operators having always been remarkable for the extent of their knowledge, and a contempt for the servile routine of those mean practitioners whose experience is little more than heaping one blunder upon another.

John Jones was not only the first Professor of Surgery at King's College but the first individual on whom that academic title was conferred in Colonial America.

Coming from a century in which lowly barber-surgeons did most of the surgery, these words were wise indeed. The first graduation from the Medical School of King's College was in 1769, at which two M.D. degrees were conferred. The same year Samuel Bard and Jones saw the need for an affiliated teaching hospital and petitioned Governor Cadwalader and the New York Council for permission to establish the New York Hospital, the forerunner of the present institution of the same name. Jones drew up the plans, and the charter was granted in 1771. The next year Jones left for London to raise money for its construction. He also spent time with his mentor-friend, Percival Pott, and received a complete copy of Pott's lecture notes, the basic material for his three-volume surgery textbook, which had just been published in 1771. It was a highly productive interlude for Jones. Even the asthmatic condition from which he suffered and which lasted throughout his life somehow improved in the London air.

War and Peace

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Returning to New York in 1774, Jones learned to his delight that the cornerstone of the New York Hospital had been laid the year before, and that construction was well under way. He resumed his work at King's College Medical School, teaching ethics as well as the latest developments in European surgery.

“Never enter medicine for profit,” he cautioned his charges, “and be sure that the conduct of your private life does not detract from your professional reputation. Eschew publicity; rely, rather, on professional achievements and integrity to secure esteem and to increase your practice.”

Such was the nature of the man. Small and unobtrusive in appearance, without affectations of any sort to enhance his already exalted reputation in surgery, Jones practiced what he preached to his students. His directness and simplicity were at odds with the demeanor of many of his colleagues, and he was openly criticized for his non-conformity. The majority of the New York physicians at the time adopted a particular hairstyle, and Jones was approached to join the movement and “bob” his hair in accordance with the prevailing vogue. When he demurred, the group boycotted him, and referrals ceased. An affluent patient, on learning of Jones' refusal, discharged his coiffed

physician, summoned Jones, and there the boycott ended.

At that time, surgery had yet to prove itself, and the status of the surgeon in the medical hierarchy was tenuous. Dr. John Gregory, professor of midwifery at Edinburgh, was of the opinion that the surgeon should be directed in the manual operation by an able physician. John Morgan, recently returned to Philadelphia from Europe, was convinced that medicine and surgery should never be undertaken by the same individual, as was the custom in the American colonies—indeed Morgan felt that it was unnecessary for the surgeon to know any medicine at all. Jones bristled at this concept. He wrote:

The variety of difficult operations, performed with such superior success and safety by the present race of surgeons, who are distinguished for their knowledge in every branch of medical learning, is an evident proof of the benefit resulting to operators, from a more liberal mode of education; and I think it can no longer remain a doubt with any unprejudiced person, that an enlightened mind, united to the person of the operator, must and will constitute the most accomplished and successful surgeon. . . . But there must be a happiness, as well as art, to complete the character of the great surgeon. He ought to have firm steady hands, and be able to use both alike; a strong, clear sight, and above all, a mind calm and intrepid, yet humane and compassionate, avoiding every appearance of terror and cruelty to his patients, amidst the most severe operations.

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In 1775, Jones completed his treatise on surgery, entitled *Plain Concise Practical Remarks on the Treatment of Wounds and Fractures*. In addition, it contained *A Short Appendix on Camp and Military Hospitals, principally designed for the use of young Military Surgeons in North America*. Printed by John Holt in New York, it was the first medical publication in the American colonies, and the first book on surgery and military medicine. In this extension of his thesis at the University of Rheims, Jones elaborated on his field experiences in the French and Indian War. His language was simple and easy to understand. He refrained from theorizing about life's grand design as was the fashion of the 18th century, and wrote,

While speculative philosophers are disputing about the origin of evil and the foundation of morals, and furious

bigots contending for different modes of faith, the practical good man will endeavor to employ himself in alleviating those evils which he finds incident to human nature, without too vain and curious an inquiry into causes, the nature and operation of which lie far beyond the narrow limits of human understanding.

With the advent of the Revolution in 1776, King's College closed, and with it the medical school. The New York Hospital became a military barracks, and did not open again until 1791. Like most of his medical colleagues, Jones was a Tory, but he refused to become a silent spectator in the war for independence. Despite assurances of safety from the occupying British forces in New York, he moved to Albany where he accepted a seat in the New York Provincial Senate and later joined the Medical Department of the Colonial Army. He and Dr. James Smith were the only members of the King's College medical faculty to offer their services to the "sons of liberty." Jones offered this rationale:

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The present calamitous situation of this once happy country demands the assistance of every virtuous citizen, and though few men (possess) those superior talents . . . required to heal . . . the whole body politic . . . yet everyman has it in his power to contribute something towards so desirable an end, and if he cannot cure . . . his unfortunate country, it will at least afford him . . . consolation to have poured a little balm into her bleeding wounds.

It is strange that Jones was not offered a more prestigious position in the Army given his preeminence in the field of surgery. His advice was sought by Congress with regard to the reorganization of the Medical Department of the Army, and Benjamin Rush, the then physician-general of the Hospital of the Middle Department of the Army, recommended his appointment as Inspector-General, but this post was never created. Though Jones had thrown in his lot with the revolutionists, his Tory background and his expressed disaffection with the radical group that sought to "establish disorder, confiscate property, and otherwise abuse the Tories" may have prejudiced the authorities against him. The evidence is not clear. But it is known that his asthma worsened in the field and in 1778, after the Battle of

Monmouth, Jones was assigned to desk duties in Philadelphia, then discharged from the Army.

His health improved to the point at which he felt able to resume his professional career, and it was not long before he was enjoying a sizeable practice in Philadelphia, a city well known to him from his years there as an apprentice. His professional reputation, moreover, which had been earned in New York, was familiar to Philadelphia's inhabitants. He was promptly given a staff position at the Pennsylvania Hospital and elected president of the Humane Society, which dispensed charity to the poor. Additionally, Jones was elected a physician at the Pennsylvania Dispensary, and in 1787, when the College of Physicians of Philadelphia was founded, he was named its Vice-President. A member of the American Philosophical Society since 1769, Jones was elected a member of its council in 1787. He remained active in practice and academic affairs until his death in 1791.

Notable Patients

Little is known about Jones' private life. According to Benjamin Rush, he never married, yet a daughter was named in his will. George Washington and Benjamin Franklin were to become his most famous patients. In 1790, Jones was summoned to treat Franklin at the time of the latter's terminal illness, and shortly thereafter wrote: "A Short Account of Dr. Benjamin Franklin's last illness, by his Attending Physician (*John Jones*)," which was published in the *Pennsylvania Gazette*. It is quoted here in part.

The stone (bladder), with which he had been afflicted for several years, had for the last twelve months confined him chiefly to his bed; and during the extreme paroxysms, he was obliged to take large doses of laudanum to mitigate his torture—still, in the intervals of pain, he not only amused himself with reading and conversing cheerfully with his family and a few friends, who visited him, but was often employed in doing business of a public as well as private nature, with various persons, who wanted to see him for that purpose; and in every instance displayed, not only that readiness and disposition of doing good, which was the distinguishing characteristic of his life, but the fullest and clearest possessions of his uncommon mental abilities; and

The first medical treatise to be published in Colonial America was written by John Jones. It was entitled Plain Concise Practical Remarks on the Treatment of Wounds and Fractures and was based largely on his experiences in the French and Indian War.

not infrequently indulged himself in those *Jeux D'esprit* and entertaining anecdotes, which were the delight of all who heard him. About sixteen days before his death, he was seized with a feverish indisposition, without any particular symptoms attending it till the third or fourth day, when he complained of a pain in his left breast, which increased till it became extremely acute, attended with a cough and laborious breathing. During this state, when the severity of his pains sometimes drew forth a groan of complaint, he would observe—that he was afraid he did not bear them as he ought—and acknowledged his grateful sense of the many blessings he had received from that Supreme Being, who had raised him, from low and small beginnings to such high rank and consideration among men— and made no doubt that his present afflictions were kindly intended to wean him from a world in which he was no longer fit to act the part assigned him. In this frame of body and mind he continued till five days before his death, when his pain and difficulty of breathing entirely left him, and his family were flattering themselves with the hopes of his recovery, when an imposthumation, which had formed itself in his lungs, suddenly burst, and discharged a great quantity of matter, which he continued to throw up while he had sufficient strength to do it, but, as that failed, the organs of respiration became gradually oppressed—a calm lethargic state succeeded—and on the 17th instant, about eleven o'clock at night, he quietly expired, closing a long and useful life of eighty-four years and three months.

President Washington was a personal friend as well as a patient. A few weeks after Franklin's death, Jones was summoned to New York to assist in an operation on the President for the removal of a carbuncle. The records are not entirely clear, but it was either at Washington's home, or following a subsequent visit to Mr. Charles Thompson, Secretary of the Continental Congress during the Revolutionary War, that Jones fell ill, dying four days later at the age of 62, on June 23, 1791.

His close friend Dr. Benjamin Rush left this entry in his diary: "This day died Dr. John Jones . . . He was much lamented by his friends and patients, as was he by his brother physicians . . . his manners were gentle and amiable, and his conduct truly liberal

(broadly educated) in his profession. He was without a rival in surgery in the United States."

The Importance of John Jones

John Jones' relationship with Columbia's antecedent, King's College, was short-lived, lasting 11 years between 1765 and the onset of the Revolutionary War in 1776. But that period was unquestionably his most productive. He played a key role in the founding of King's College Medical School and the establishment of its teaching adjunct, the New York Hospital. He was awarded the first professorial title in surgery to be bestowed in America, and although he was not a prolific writer, Jones published the first medical treatise in the New World. His skills as a surgeon were unparalleled. He brought midwifery (obstetrics) and lithotomy (urology) into the surgical realm, and his insistence on practical hygiene in the military encampments undoubtedly saved many lives.

But his most lasting contribution to surgery and the reason, above all others, why he *should* be remembered was his redefinition of the profession. He fervently believed that a surgeon should be more than an unthinking technician; that a surgeon should be broadly educated in the healing arts, capable of addressing illness in all its forms; and that a surgeon should be as nobly motivated as the most caring and compassionate physician. He brought, as none had before, dignity and stature to surgery; and in so doing he transformed a trade into a lasting profession.

Surgical Professors and Chairmen at Columbia (1767-2003)

I. Medical School of King's College 1767-1776

1767-1776 John Jones

II. Medical School of Columbia College 1784-1813

1785-1791 Charles McKnight

1792-1793 Wright Post

1793-1811 Richard Bayley

1811-1813 Valentine Mott

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III. College of Physicians and Surgeons (Independent) 1807-1891

Professors/Chairmen

1808-1813 John Augustine Smith

1811-1813 Wright Post

1813-1826 Valentine Mott

1826-1837 Alexander H. Stevens

1831-1837 Valentine Mott

1837-1839 Albar Gold-Smith

1839-1840 Alexander H. Stevens

1840-1870 Willard Parker

1844-1869 Alexander H. Stevens

1850-1852 Valentine Mott

1870-1888 Thomas Markoe

1879-1888 Henry Barton Sands

Presidents of P&S

1807-1811 Nicholas Romaine

1811-1821 Samuel Bard

1822-1826 Wright Post

1826-1831 John Watts

1831-1843 John A. Smith

1843-1855 Alexander H. Stevens

1855-1858 Thomas Cook

1858-1875 Francis Delafield

1875-1884 Alonzo Clark

1884-1889 John C. Dalton

1889-1891 James W. McLane

1888-1891 William T. Bull

IV. College of Physicians and Surgeons (Columbia) 1891-2003

Department Chairmen

1891-1904 William T. Bull

1892-1903 Robert Weir

1904-1913 Joseph Blake

1913-1917 George Brewer

1917-1921 Adrian Lambert (acting)

1921-1946 Allen O. Whipple

1946-1969 George H. Humphreys II

1969-1971 Frederic P. Herter (acting)

1971-1994 Keith Reemtsma

1994- Eric A. Rose

The Century of Discovery

The 19th century saw quantum leaps in the understanding of disease. Against the bleak backdrop of medical ignorance that Jones confronted in the Colonial period, there rapidly appeared a number of scientific observations that defined the cellular structure and function of body tissues. By 1839, Rudolph Virchow at the Institute of Pathology in Berlin had concluded that disease was simply a manifestation of abnormal cellular function, but it was Pasteur's epic discovery of bacteria and Robert Koch's observations at the University of Berlin relating specific microorganisms to specific diseases that gave form and meaning to Virchow's cellular theory. While studying the process of fermentation in 1862, first in milk, then in wine, Louis Pasteur disproved the then current belief of spontaneous generation and introduced the germ theory of disease. In 1876, Koch identified the bacillus responsible for anthrax, and before the end of the century discovered the causative organisms in leprosy, diphtheria, gonorrhea, typhoid fever, Malta fever (brucellosis), tetanus, plague, botulism, pneumonia, meningitis, tuberculosis, and suppurative (productive of pus) infection. The work of these two men, superimposed on the pathological observations of Virchow, changed existing concepts regarding the nature of infectious disease, and provided a base for treatment and prevention. Unquestionably this was the most important advance yet seen in the world of medicine—it dwarfed all other scientific events of that remarkably productive period. But not until well into the 20th century was the full promise of this work realized in the form of antimicrobial therapy.

Prophylaxis was a different matter. Sporadic forays had been made in the previous century into the causes and prevention of contagion, particularly the spread of typhus, typhoid, scarlet fever and diphtheria, and in 1800 the medical world was astounded by the creation of a vaccine against smallpox. Edward Jenner, a student of the anatomist John Hunter, was responsible for this striking development. It was all the more remarkable because the offending organism, the variola virus, was not known. Even in 1847, when the Hungarian physician P. Ignacz Semmelweis reported on the efficacy of hand-washing by doctors and nurses between patient and autopsy visits to control puerperal fever, the so-called “noxious” agents surmised to

be responsible had yet to be identified (the streptococcus and staphylococcus organisms were later to be implicated). Semmelweis was unaware of Pasteur's early work. He was also unaware that in Boston, Dr. Oliver Wendell Holmes was at the same time claiming primacy in the discovery of the causes of puerperal fever. The synchronous observations were almost certainly coincidental.

The importance of hygiene in controlling contagion and hospital sepsis was widely accepted towards the end of the 19th century, thanks largely to Baron Joseph Lister (1827-1912), Professor of Surgery at the University of Edinburgh.

New Horizons in Surgery

The striking reduction in mortality and morbidity rates from sepsis following surgery can be ascribed in large part to the use of antiseptic measures during surgery. Dr. Joseph Lister deserves the lion's share of credit for this, for he not only developed a form of chemical antiseptics for use in the operating room, but he aggressively convinced the surgical world of its benefits. Faced with a mortality rate of 40 percent for amputations at his Edinburgh hospital (virtually all due to sepsis), he became avidly interested in Pasteur's work in 1885. Two years later he reported the use of a carbolic acid topical spray on the surgical field during 11 operations, with success (avoidance of sepsis) in nine. He soaked catgut sutures in the acid, and in 1870, he began to spray the air in operating rooms as well as the wound with carbolic. Ten years later, only two clinics in England were using the Listerian technique, but it was eagerly adopted elsewhere, first in Germany and then in America, with both countries reporting favorable results.

Meanwhile Hugo Davidsohn, working in Koch's Berlin laboratory in 1888, observed that both bacteria and spores were destroyed by five minutes of boiling. Thus not only was the operating room environment now relatively free of air-borne contamination thanks to Lister's carbolic spray, but surgical instruments were rendered sterile by steam heating. These events were of momentous importance to the surgical profession—the pervasive fear of sepsis following virtually every type of surgery was not totally eliminated, but was significantly reduced. Entering a body cavity was no longer a concern because of the likelihood of infection, so all sorts of opportunities presented themselves to the adventurous surgeon.

Of an importance comparable to antiseptics in the practice of

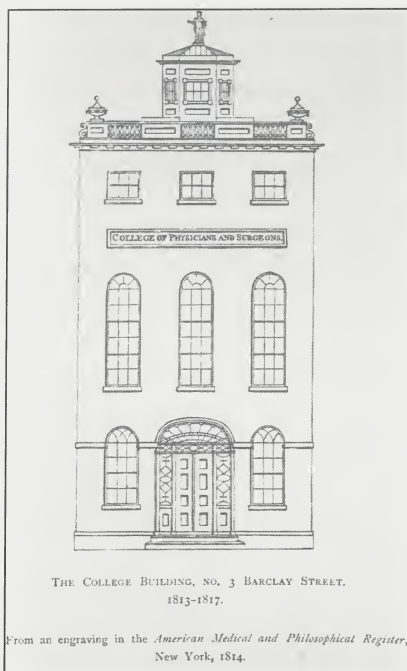
surgery during the 19th century, was the discovery that ether was effective as an anesthetic agent, for without control of pain during surgery all but the most superficial and simple procedures were out of the question. All three basic anesthetic agents—ether, chloroform and nitrous oxide—had been known for a long while, and although their properties of inducing sleep were recognized, they had not been put to medical use. Ether, like laughing gas, had for some time been inhaled by medical students to alter consciousness, and it is amazing that at an earlier date this allegedly pleasurable habit had not been applied to surgery.

On March 30, 1842, Dr. Crawford T. Long, of Danielsville, Georgia, convinced a friend to submit to ether administration for the removal of a small tumor on the back of the neck. The simple operation was a total success, and during the next four years Long used ether eight additional times for relatively short procedures with equal success. In 1846, Dr. William Thomas Green Morton, a dentist in Boston, used the same agent in an open demonstration of its efficacy in a surgical procedure at the Massachusetts General Hospital in what is now known as the "Ether Dome." All went well, and at the end of the operation, Professor John Collin Warren of Harvard was heard to say to the assembled doctors, "gentlemen, this is no humbug."

Word of the miracle of ether quickly spread through the surgical world (though England preferred chloroform for some time), and its use opened new gates for surgical exploration. As speed was no longer a major consideration, care could be given to the control of bleeding and the gentle handling of body tissues during operations. It was a giant step forward in the practice of surgery, and the next 50 years produced an explosion of new surgical approaches to a large number of theretofore untouched afflictions.

The Emergence of the College of Physicians and Surgeons

At the same time the general field of surgery was undergoing a sea change, a comparable metamorphosis was taking place in the institutions responsible for medical teaching and training. When King's College and its Medical School reopened in 1784 under its new name, Columbia, John Jones was no longer a member of the faculty. He had taken his remarkable talents to Philadelphia, leaving Samuel Bard to



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*The College Building, No.3 Barclay Street,
1813-1817.*



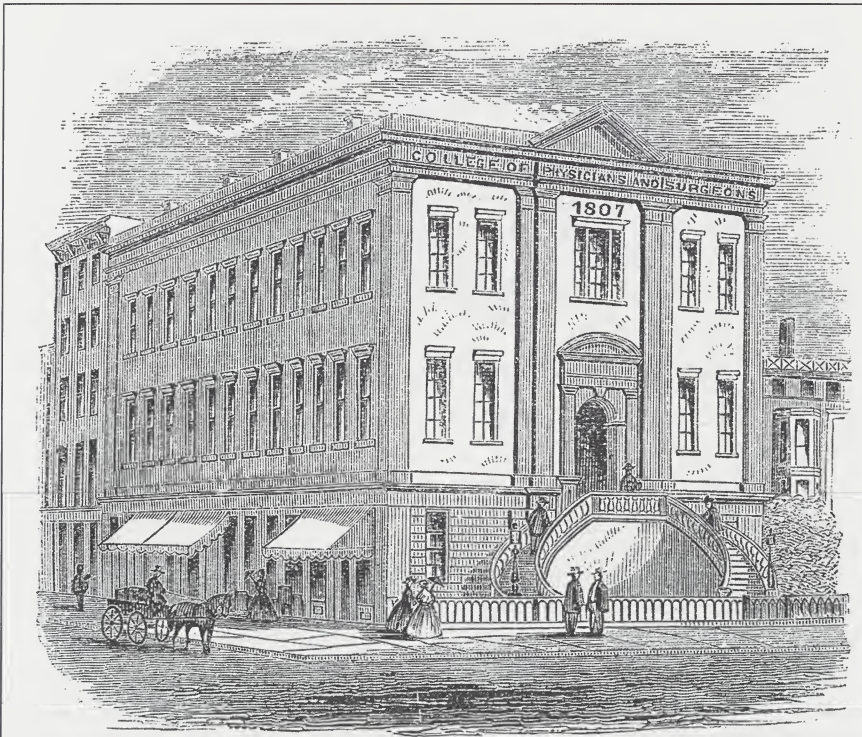
*College of Physicians and Surgeons,
Crosby Street, 1837-1856.*

oversee the development of a new medical faculty. Nine teachers were appointed, but during the next two decades only 24 students were granted medical degrees. The reputation of the school suffered accordingly. Faculty discontent grew, particularly after the emergence in 1807 of a formidable competitor, the College of Physicians and Surgeons (P&S), an independent, proprietary medical school chartered by the Regents of New York State “for the promotion of medical science and diffusing the knowledge of the healing art.” P&S was located in lower Manhattan, first on Barclay Street, later at 4th Avenue and 23rd Street. Dr. Nicholas Romaine was its first president, and 53 students were enrolled in its first class. The faculty was made up largely of defectors from Columbia, Samuel Bard among them. By 1813 this new institution had convincingly out-classed its older rival, and the Medical School of Columbia College had little choice but to close. Its remaining teachers were absorbed by P&S.

Columbia College was thus left without a legally constituted medical school of its own between 1813 and 1891. It was not a fatal loss—the College grew in size and quality during those years. Moreover, it retained an unofficial but commonly recognized affiliation with the independent P&S because of the large number of erstwhile Columbia Medical School faculty members on its original roster of teachers. As Columbia College prospered during that 78-year period, so did P&S. Its student enrollment steadily increased, as did its curricular offerings, and the depth and quality of

the faculty (most of whom had studied abroad under either Claude Bernard in Physiology, Virchow in Pathology, Priestley and Lavoisier in Chemistry, or Pasteur and Koch in Bacteriology), was unparalleled. P&S was unequivocally the leading medical school in New York, and arguably the best in the land. Columbia College was of similar prominence among academic institutions in America. It seemed inevitable that these two outstanding schools would join hands at some juncture, but it was not until 1891 that the marriage was finally consummated.

NOTE: *The College of Physicians and Surgeons was an independent proprietary medical school without a formal university affiliation until 1891, when it became an integral part of Columbia University. Henceforth it will be referred to in the text as P&S, whether pre- or post- the Columbia affiliation.*



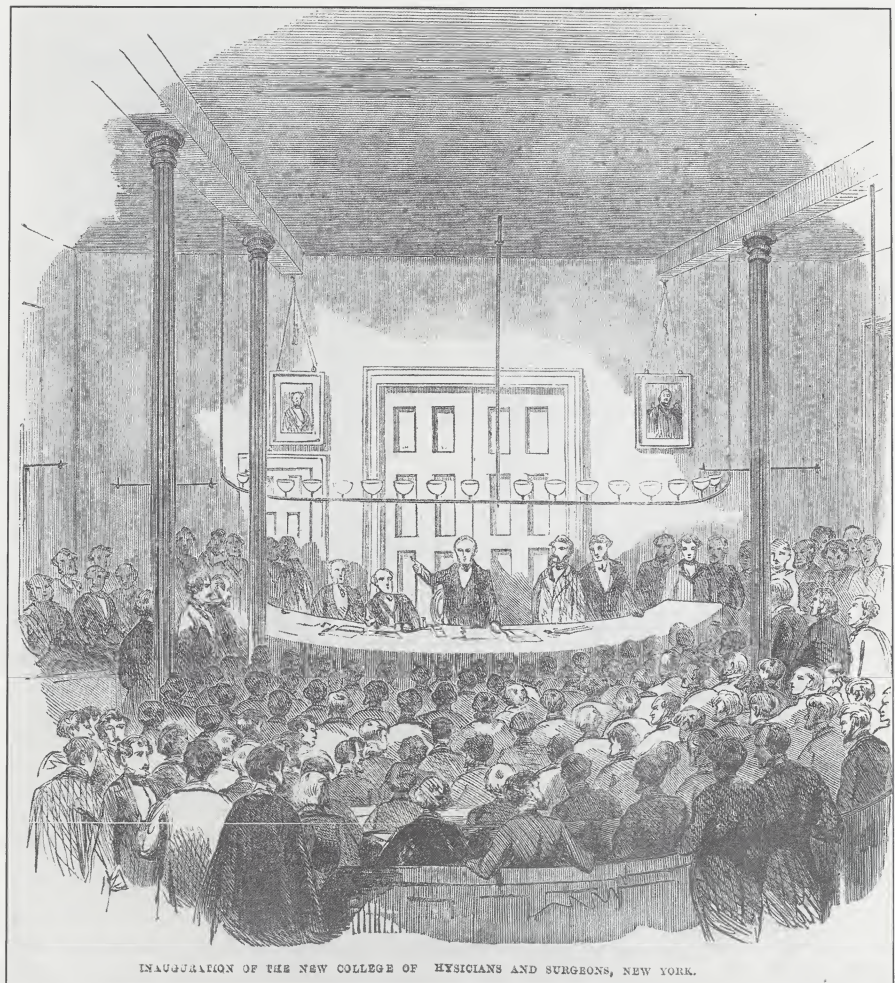
COLLEGE OF PHYSICIANS AND SURGEONS.

Twenty-third street and Fourth avenue.

Alfred C. Post, M.D., *President*,
 Gurdon Buck, M.D., *Vice-President*.
 Ellsworth Eliot, M.D., *Secretary*.
 Henry B. Sands, M.D., *Treasurer*.

*College of Physicians
 and Surgeons,
 East 23rd Street and
 corner of 4th Avenue,
 1856-1887.*

Four professors of surgery served the Medical School of Columbia College between its inception in 1784 and the takeover by P&S in 1813. Dr. Wright Post, the first, was considered the outstanding surgeon in New York at the time, and gained fame as a pioneer in vascular surgery. In 1813 he published a paper describing the ligation of the external iliac artery for an aneurysm, the second procedure of this type to appear in the literature. When the Columbia Medical School was absorbed by P&S in 1813, Post was appointed Professor of Anatomy and Physiology at P&S, and served as its President from 1821-26. His successor as Professor of Surgery at the Medical School of Columbia College, interestingly enough, was Richard Bayley, his original mentor during his apprenticeship, and later, his father-in-law.



Inauguration of the new home of College of Physicians and Surgeons, New York, 1856.

The last of the Columbia College professors of surgery, but certainly not the least, was Valentine Mott, regarded as the dominant force in American surgery during the first half of the 19th century. The Chair bearing Mott's name has been awarded the last four Departmental chairmen.

The Pioneering Dr. Mott

Valentine Mott, Professor of Surgery at P&S from 1813 to 1826, built his reputation in New York as a brilliant general surgeon and a pioneer in vascular surgery. He is now referred to by many as the father of vascular surgery.

Born in 1785 of Quaker parents (his father was a doctor), Mott served as apprentice to a kinsman, Dr. Valentine Seaman, a surgeon at the New York Hospital. In 1807, he went to London to study under Astley Cooper (as did John Jones before him), then to the University of Edinburgh. On returning to New York in 1809, he set up a surgical practice, and gave a private course of lectures and demonstrations in the anatomical rooms of Columbia College. Mott was appointed Professor of Surgery in 1811, and he retained this rank at the College of Physicians and Surgeons when it absorbed the Columbia faculty in 1813. He remained there until 1826, teaching and carrying on an impressive practice at the New York Hospital. Tall, strongly built, and ruddy in complexion, Mott was a bold and innovative surgeon. Like Jones, he was ambidextrous. Alfred Post's eulogy, in 1865, described Mott as a man of sanguine temperament and sociable disposition, with mental endowments of a solid and substantial nature rather than brilliance. Others found him to be courageous and imaginative, but uneven in disposition and occasionally feisty.

Personality aside, Mott's reputation soared in 1808 when he managed to control the bleeding from an aneurysm of the right subclavian artery in a sailor named Michael Bateman. Anesthesia was provided by a generous dose of rum (so the story goes as related by George Humphreys), the sailor was strapped to a chair, and Mott, standing behind him, made an incision over the pulsating mass in the supraclavicular space, reached down with a linen thread on an aneurysm needle and managed to bring it around the innominate artery, which he ligated. The pulsations in the aneurysm ceased. But he left the loose ends of the linen suture hanging out of the wound and infection set in (as would now be predictable). The suture came

out, and the patient died of hemorrhage three weeks later. Mott was publicly charged with error in the placing of the ligature, but the audacity of his operation brought him instant fame, and some think his professorial appointment was awarded as a result.

In 1827, Mott successfully tied off the common iliac artery for an aneurysm of the external iliac—and the patient survived. Mott



Dr. Valentine Mott (1785-1865).

was also one of the first to perform a successful leg amputation at the hip joint and to excise the jaw for necrosis. He was a pioneer in the surgery of veins. During his career, he is estimated to have done 1,000 amputations, 165 bladder lithotomies (seven deaths), and over 100 artery ligations (46 carotid, 52 femoral, and seven subclavian). He considered excision of the clavicle his most difficult operation. Procedures for the correction of harelip and spina bifida were in his repertoire. According to Astley Cooper, he performed more major operations than any surgeon in history, and his reputation in Europe was such

that he was summoned to operate on the Sultan of Turkey. With the advent of general anesthesia in 1846, he became an authority on the subject, and during the Civil War he wrote a treatise entitled *Pain and Anesthetics* (1862), one among 25 medical papers.

Mott's extraordinary energy and productivity gave rise to occasional erratic behavior. His long career at P&S was marked by resignations and absences. In 1826, Mott left to found the Rutgers Medical College; this venture lasted but five years. He returned to P&S, but in 1835, he left again, this time for ill health. To a friend he wrote, "The pressure of unremitted and severe application had, in my own case, wrought a dangerous dilapidation of all vital forces." He spent the next six years traveling in Europe, Asia, and Africa, regaining his health. Even then he was creative, writing a fascinating account of his

travels. On his return, he did not rejoin the faculty at P&S immediately, but rather assisted in the founding of the Medical Department of the University of the City of New York, where he was made Professor of Surgery and Anatomy. From this institution Mott resigned in 1850 and accepted for the third time an appointment at P&S. Almost immediately his failing health again took him to Europe for what proved to be his last trip, and when he returned in 1853 it was as an emeritus professor. Mott remained associated and active with P&S for the remainder of his years. He died in 1865 at the age of 80.

Worldwide Developments in Surgery

We call John Jones the Father of Surgery in this country, but others have awarded that title to Dr. Ephraim McDowell, an otherwise unknown surgeon. In 1809, he performed the first celiotomy (entering into the abdominal cavity) on record in the U.S. McDowell was privileged to have had the opportunity to study under John Bell, the famed Edinburgh surgeon and anatomist, before setting up practice in the small Kentucky town of Danville. One day he was called to see a Mrs. Thomas Crawford, who lived 60 miles away in a farm community. Her life was being compromised by a huge abdominal tumor, and McDowell persuaded her to return with him to Danville for the necessary surgery. This she did by horseback, supporting the tumor on the pommel of her saddle, and when she arrived three days later, a decubitus-like pressure ulcer had developed on her lower abdomen. On Christmas Day, McDowell operated on her in his kitchen; he entered the abdominal cavity, emptied the ovarian tumor of its contents, ligated the small pedicle, and removed the tumor remnant. The tumor and its contents weighed over 22 pounds. The procedure had taken 25 minutes. There being no anesthesia, the patient calmed herself during the procedure by reciting psalms aloud. An anxious crowd waited outside Dr. McDowell's house, apparently ready to hang him should Mrs. Crawford not survive. Not only did she survive, but she was up making her bed four days later. McDowell's courage and skill brought him instant fame. His patient lived happily and well to the age of 79, but the sad irony of this tale is that her celebrated surgeon died from peritonitis (acute appendicitis) in 1830, well before his time.

One would think that McDowell's successful laparotomy would have been followed shortly by a rash of similar invasions of the abdominal cavity, regardless of the lack of anesthesia. But it wasn't until 1844

that his feat was repeated again in America.

The now commonplace abdominal procedures—appendectomies, cholecystectomies, gastric and colon resections, etc.—were rarely, if ever, performed until the last quarter of the 19th century. Why this long delay? The fact is that the nature of these abdominal afflictions was just beginning to be understood, and the surgical approaches to treatment were tentative and experimental. Moreover, the threat of infection lingered, despite the miracles of Pasteur and the burgeoning use of Listerian antisepsis. According to 1889 statistics from the Presbyterian Hospital, of the 402 operations done in that year, there were 86 drainages of abscesses, 20 amputations, 11 herniorrhaphies, and six operations for cancer of the breast. Although the abdomen was opened 33 times, only one appendectomy was attempted. No operations were done on the gallbladder, thyroid, or colo-rectum. There were 60 post-operative deaths, a mortality rate of 16.5 percent. Fifty years later, in 1930, the 3,259 operations performed at Presbyterian Hospital carried a mortality rate of only 2.1 percent (and this preceded the use of antibiotics).

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The scope of surgery expanded dramatically in the last quarter of the 19th century. The pathologist Reginald Heber Fitz of Boston established appendicitis as a clinical and pathological entity in 1886. His carefully annotated review of 466 collected cases of appendicitis was a masterpiece, but it failed to make explicit recommendations about treatment (Fitz was a pathologist). Recognition is due to Willard Parker, Henry Sands, and Charles McBurney of P&S and Presbyterian Hospital, and Thomas Morton of Philadelphia, for stressing in subsequent articles the importance of early diagnosis and intervention in this condition. Not to be forgotten are the two appendectomies done by Dr. William Halsted in the early 1880s, well before the Fitz publication—both patients died from peritonitis, but these were the first excisional procedures done for appendicitis in New York. Halsted's colleague at Roosevelt Hospital, Richard Hall, was responsible for the first *successful* appendectomy in the country in 1886.

The first instance of drainage of a distended gallbladder was in 1867, with John S. Bobbs of Indianapolis the surgeon of record. The obstetrician-gynecologist Marion Sims carried out a similar procedure in 1878 and named the operation a cholecystostomy. In 1896, Ludwig Georg Courvoisier, a London-based surgeon, became the first to extract stones from the common bile duct. William Halsted (whose many accomplishments in surgery will be presented below) and McBurney, further refined this operation.

Carcinoma of the breast was treated by total mastectomy and, when indicated, axillary dissection, by Charles H. Moore at the Middlesex Hospital in London in 1867. In an 1880 article, Samuel Gross of Philadelphia advocated axillary dissection, but it was Halsted in 1889, who radicalized the operation, removing skin, fascia, the entire breast and the axillary contents. This extensive procedure necessitated a skin graft. The local cancer recurrence rate fell to 6 percent in his first 50 cases.

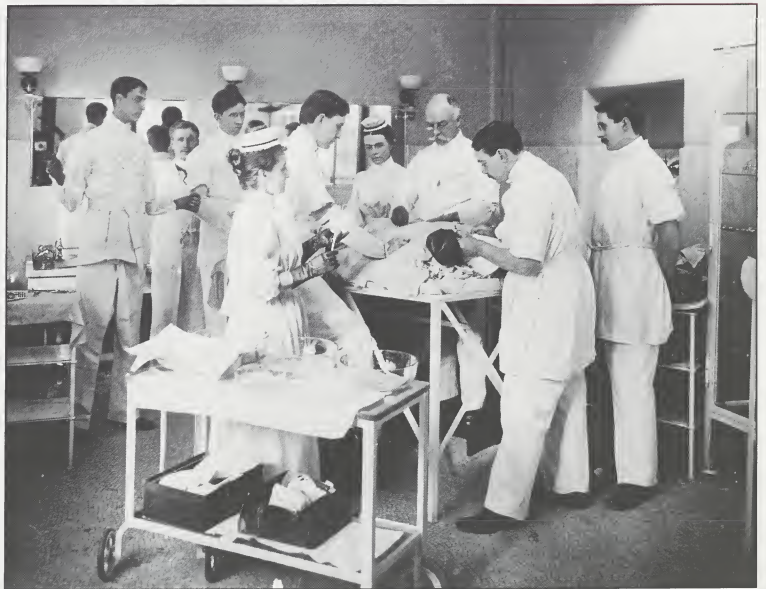
The above are brief samplings of the more common operations introduced during this extraordinarily productive period. What an advance they represent over the colonial years, thanks to the new discoveries outlined above, the spate of new diagnostic tools (the thermometer, the stethoscope of Laennec, the X-Rays of Roentgen, and the techniques for measuring blood sugar levels), and the courage and inventiveness of a generation of surgical pioneers.

Columbia's Surgical Notables

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Although P&S is cited infrequently in the surgical literature during that long interval between Valentine Mott and Halsted, that in no way denigrates the reputation and importance of the medical school.

P&S was the center of academic activity in New York, particularly in the burgeoning basic sciences, and its early presidents, John Augustine Smith and Alexander H. Stevens, were both surgeons of note. Smith was the first Professor of Anatomy and Surgery at the newly founded P&S in 1807, and Stevens succeeded Mott as Professor of Surgery in 1826, and served as President of P&S between 1843 and 1855. Although out-shone by Mott in the operating room, he was widely revered for his judgment and integrity and



Dr. Charles McBurney operating at Roosevelt Hospital, (note: no masks and open drop ether), 1898.

was responsible for stabilizing and strengthening the faculty.

One of Smith's appointees, Willard Parker, served ably as Professor of Surgery between 1839 and 1869. Parker was educated at Harvard; his original intent was to enter the ministry, but he was diverted to medicine by the great Dr. John Collins Warren. At P&S he was widely recognized as a brilliant teacher. Parker's important contributions to the management of appendicitis have been cited earlier.

William Tillinghast Bull was the last Professor of Surgery at P&S before the school's absorption by Columbia in 1891. He was the first American doctor to devote himself *exclusively* to surgery, and was perhaps best known for his paper reporting on 118 radical mastectomies for breast cancer, the most valuable contribution to the subject by an American surgeon of that time. He was an expert on the treatment of gunshot wounds and an active enthusiast of Listerian antisepsis. Bull was followed by Professor/Chairman Robert Fulton Weir, whose term bridged the centuries. In 1900 he was director of surgery at Roosevelt Hospital and considered one of the most brilliant surgeons of his time. He was among the first to recognize duodenal ulcer as a clinical entity.

There were other surgical notables in the Columbia stable during the first decade of the 20th century. Gurden Buck, an uncle of Dr. Hugh Auchincloss, Sr., introduced gauze sponges for the first time to the operating room, and his method for stabilizing fractures was given his name. Dr. William Van Buren, son-in law of Valentine Mott, was perhaps best known for having collaborated with Edward Keyes in writing the classical treatise on genito-urinary diseases. Finally, Dr. Andrew J. McCosh, who succeeded Halsted as Chief of Surgery at Roosevelt in 1887, moved to Presbyterian Hospital where he headed the Medical Board from 1903 to 1908. McCosh was reputed to be a fearless surgeon, not averse to performing difficult operations on the spinal cord. He eschewed the use of automobiles and made house calls by horse and stylish carriage. Ironically, he was killed by being thrown out of his carriage to the pavement outside of the Presbyterian Hospital when his horse bolted. The surgical amphitheater in the 1928 hospital building was named after McCosh. The discomfort of its seating was memorable, but oftentimes it failed to keep the attendings awake during Rounds. The amphitheater was replaced several years later to everyone's joy.

Halsted and Welch

If Columbia's Valentine Mott dominated American surgery during the first half of the 19th century, it was William Stewart Halsted, a graduate of P&S, who overshadowed all others in that field during the last years of that century and the beginnings of the 20th. His prominence in surgical history warrants special emphasis. His friend and colleague, William Howard Welch, also a graduate of P&S, deserves comparable attention in the field of Pathology. The careers of both these men began in New York and ended in Baltimore, where they took part in the founding the Johns Hopkins School of Medicine (1893), and raised it to the front rank of medical institutions in America. For Columbia to claim some credit for the successes of Halsted and Welch is perhaps presumptuous. But a careful review of their contributions to surgery and pathology point out the importance of those early years to their life-long creative output.

Welch graduated from P&S in 1875. His mixed medical education included two years of apprenticeship to his father, a physician, two years of didactic lectures at P&S (five months each year), and some supplemental anatomical dissection. He took an elective course under Francis Delafield in pathology, and did a number of autopsies at Bellevue. After training in microscopical pathology in Germany during the next two years, he became a skilled microscopist and produced some original research on pulmonary edema. Germany at this time had 20 medical schools, each with a teaching hospital, and Welch's experience there played a valuable role in the later shaping of Hopkins. In 1877 he returned to New York and established a pathology laboratory at Bellevue Hospital. It was there that his close friendship with Halsted developed. In 1885, despite strong inducements to remain in New York, he accepted the position of Professor of Pathology at Hopkins.

Halsted, two years Welch's junior, was born in 1852. He was educated at Andover and Yale (where he captained the football team in 1874 but was otherwise undistinguished). His slight interest in medicine consisted of buying a copy of *Gray's Anatomy* and *Dalton's*



Dr. William Stewart Halsted, 1889.



William Stewart Halsted with intern staff at Bellevue Hospital, 1877.

Physiology in his senior year. It was with honors, however, that he graduated from P&S in 1877.

While in medical school, he served as an assistant to Professor of Physiology John C. Dalton. After an internship at Bellevue and a short period as House Physician at the New York Hospital, he left for two years of study (primarily anatomy) in Paris, Vienna, and Berlin, returning to New York in

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1880. There he was welcomed to the surgical staffs of a number of hospitals, and Dr. Henry B. Sands, Professor of Anatomy and Surgery at P&S and Senior Attending at Roosevelt Hospital, invited Halsted to be his associate. Halsted would spend his mornings in the Out-Patient Department at Roosevelt, and his afternoons teaching and practicing at five other institutions, including Presbyterian, where he joined the surgical staff in 1883. He served as an instructor in anatomy at P&S. His life was frenetic but highly productive, and his surgical skills and innovative mind quickly gained attention. Between 1882 and 1886, he submitted 21 papers to medical societies or periodicals, covering such diverse subjects as traction and countertraction in the treatment of fractures, the management of gonococcal infections, and the reinfusion of oxygenated blood to victims of carbon monoxide poisoning.

In 1881, Halsted transfused his sister, who was dying of uncontrollable hemorrhage following delivery, with his own blood, using a syringe. She recovered. Dr George Heuer of New York Hospital described this as "the first instance in a human being of a successful direct blood transfusion by the syringe method." The next year he operated on his own mother for cholecystitis at her home in Albany, New York. She was acutely ill, jaundiced, with tenderness in the right upper quadrant of the abdomen. In the middle of the night, Halsted drained pus from the infected gallbladder and removed seven stones. She did well for a period, but died two years later of recurrent gallbladder infection.

At Roosevelt Hospital in 1884, Halsted, along with his colleagues Hall and Hartley, began experiments with cocaine as a topical anesthetic (its use as a corneal anaesthetic in eye surgery had been reported in Belgium). The trio and their laboratory assistants initially tried cocaine themselves and several became addicted. Halsted additionally fell under the spell of morphine, which he took in an attempt to counter the deleterious effects of cocaine. Not only did his personality suffer, but his surgical activities degenerated and came to a virtual halt—his last attendance at a New York Surgical Society meeting was on April 28, 1885, less than six months after his cocaine experimentation had begun. Many in the New York medical community held him responsible for the addiction of his cohorts. His reputation in New York suffered accordingly, and he felt obliged to leave the city in 1886.

His friend William Welch saved him, taking Halsted first on a long sea voyage during which the cocaine addiction was cured (but not the addiction to morphine, which remained throughout his prestigious career), then securing him a position as Assistant Surgeon at the Johns Hopkins Hospital in 1889. Halsted's condition remained stable, and in 1890 he was granted the title of Surgeon-in-Chief. Two years later, he was given the academic appointment of Professor of Surgery, and thus became a founding Professor of the Hopkins Medical School, which opened in 1893. The renowned foursome of Sir William Osler, Halsted, Welch, and H. A. Kelly turned Hopkins into the most revered medical institution in America during the first decades of the 20th century.

Halsted's contributions to the practice of surgery were manifold. He initiated the use of rubber gloves in surgery (it is said that his wife had a hand in this—she was his scrub nurse and had allergies to the disinfectants used in the operating room). He was one of the first to substitute fine silk sutures for absorbable catgut. He designed metal clips for hemostasis in vascular procedures. He brought Kocher's techniques for thyroidectomy to the U.S., and introduced a new form of inguinal hernia repair. Halsted also refined techniques for gallbladder and common duct surgery, and was perhaps best known for his meticulous radical mastectomy, later espoused at Presbyterian Hospital by Cushman Haagensen. Whereas Halsted's surgical style in the New York period was aggressively rough and rapid, albeit courageous, his method changed dramatically at Hopkins to a slower, more deliberate and meticulous technique, with assiduous attention to hemostasis, gentle handling of tissues, and careful apposition of

anatomical structures during closure. No one knows whether or not this transition was a reflection of the more general personality alterations induced by his struggle with addiction, but the new “Hopkins” operating room technique became Halsted’s hallmark and still bears his name.

Halsted’s remarkable career in surgery might have assumed even greater dimensions had it not been blighted by his struggle with addiction. Some argue differently, suggesting that his illness may have given him the intensity of focus necessary for invention and discovery. Certainly his creativity never faltered. As he grew older, however, he became withdrawn and less approachable. He was often critical of others and caustic in his opinions, though he had his moments of being a “delightful and witty companion to his friends.” He died in 1922 at the age of 70 from complications of gallbladder surgery—an ironic ending for the exalted professor.

William Halsted will be remembered first for his connection with Hopkins, not Columbia, but one cannot avoid speculating about the path his career might have taken without cocaine. According to Dr. Whipple, he was on the short list for the P&S Chair before his illness supervened. William Halsted would have had a brilliant career regardless of his academic base, and Columbia should be proud for having had at least a small part in his development as a surgeon and educator.

Surgical Training

The education and training of surgeons also played a significant role in the successes of the late 19th century. It was no longer the only option to serve as an apprentice for a number of years or to visit the university centers of Europe. Medical schools in America, so rare in the times of John Jones, steadily increased in number throughout the 19th century, and along with the bestowal of “home-grown” M.D. degrees, the curricula gradually added pathology, chemistry, and physiology to the venerable subjects of gross anatomy and *materia medica* (pharmacology).

Anatomical dissection remained essential to the formal undergraduate education of the surgeon, and with it came the continuing need for cadavers. Even with the 1854 Public Health Law (which liberalized the conditions determining the use of cadavers in medical teaching), cadavers remained in short supply and the nefarious

business of grave robbing persisted. In 1878, an event occurred which shook the surgical world. On May 26th of that year the father of President Benjamin Harrison died and the burial took place three days later in North Bend, Ohio. Several days later, the President visited the Ohio Medical College in Cincinnati in search for the remains of a close personal friend who had died. To his horror, he found the body of his father. Needless to say, it wasn't long before the state passed the Anatomy Law ending the practice of grave robbing by legally allowing medical schools to acquire cadavers for teaching purposes.

Along with the proliferation of medical schools came an explosion in hospital building across America, beginning at the onset of the Civil War. The growing availability of hospitals was a godsend to fledgling surgeons in search of more operating room experience. Although preceptorship training persisted, an increasing number of medical school graduates looked to the hospitals for on-site clinical experience, fledgling surgeons among them. An elite few hospitals (including Presbyterian, Roosevelt, and New York Hospital in the New York area) eventually became affiliated with academic institutions, but there was an initial reluctance to allow medical students into the hospital wards and laboratories. This issue, in fact, was the prime reason Columbia chose Presbyterian over Roosevelt Hospital as its teaching institution—Roosevelt would not compromise on its refusal to allow medical students access to its wards.

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P&S, particularly after its affiliation with Columbia, gradually added more advanced educational opportunities for would-be surgeons. The decade preceding World War I, in fact, will be better remembered for the advances made in the teaching of surgery at P&S than for the surgical feats of the staff. The Surgical Research Laboratory opened in 1903 with projects in rectal anesthesia, intestinal obstruction, and control of air pressure in thoracic procedures. This last project led to dual thoracic surgical operating rooms. The patient's head was put through a hole in the wall into an adjacent room where the air-pressure was higher than in the first operating room. In 1905, dogs were used to teach surgical technique, and the next year a course in experimental surgery was initiated. In 1910, surgical courses were introduced using both cadavers and experimental animals. Much credit for these changes, and for the interest they provoked, should be ascribed to Dr. William Clarke, who was in charge of student teaching, and who became a key member of Whipple's first faculty in 1921.

The Birth of the Columbia Presbyterian Medical Center

The Presidents of P&S who followed Alexander H. Stevens in 1855—Thomas Cook, Francis Delafield, Alonzo Clark, John Dalton, and James W. McLane—took two important steps to influence the futures of the Medical School and Columbia College. The first and most critical was the cultivation of a base for the eventual alliance of these two institutions. The planning process began in 1861, but not until



Presbyterian Hospital's horse-drawn ambulance in 1909.

1891, 30 years later, were conditions met for a legally valid merger. The second significant move, in 1887, was the relocation of P&S to West 59th Street, adjacent to Roosevelt Hospital. Both of these developments added to the academic profile of P&S.

The year 1891 was a momentous one, for after three decades of nominal allegiance, P&S and Columbia became fully integrated. Dr. James W. McLane of P&S and President Seth Low of Columbia closed the agreement—P&S turned over \$1,653,000 in assets to Columbia, but reserved the right to nominate its staff and to refuse admission to women. (This last condition was reversed in 1917.) Columbia, in turn, assumed full legal and financial responsibility for its new graduate school.

While the foregoing events were in process at P&S, a new institution entered the arena. In 1868, James Lenox, a wealthy New

York philanthropist of Presbyterian faith, founded a new hospital with the help of a small coterie of friends and businessmen of similar persuasion. The land for the building, at Madison and 71st Street, was donated by Lenox's father and Presbyterian Hospital opened its doors in 1872, but only to Presbyterians. When Dr. Oliver White, the personal physician to Lenox, was unable to locate a hospital bed for a friend's servant, he indignantly approached Lenox with the expressed hope that someday there would be a hospital "broad enough to admit patients without regard to color or creed." Lenox was sufficiently moved to have a tablet made with the inscription "For the Poor of New York without Regard to Race, Creed or Color," and have it placed above the portal to the Hospital. This plaque was later moved to the Columbia Presbyterian Medical Center at 168th Street, where it remains today.

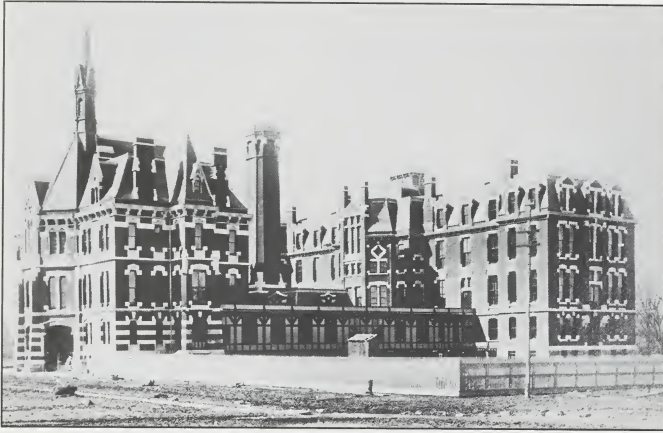


The College of Physicians and Surgeons, Sloan Hospital for Women, and Vanderbilt Clinic on West 59th Street, 1887.

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The medical staff and administration at Presbyterian Hospital were of high quality, and not even a catastrophic fire in 1889 threatened the hospital's first-rank reputation. After its reconstruction and reopening in 1892, it competed with Roosevelt Hospital as a teaching hospital to provide clinical experience for P&S students. Roosevelt, located on West 59th Street right next to P&S, was the logical choice. A possible merger with Roosevelt had the strong support of Columbia's president, Dr. Nicholas Murray Butler, and the Dean of P&S, Dr. Adrian Lambert. A group headed by Dr. McLane, the President of the Board of Managers of Roosevelt, opposed the merger, citing their conviction that medical students should not be allowed on the wards or in the laboratories of their institution.

There may have been a personal reason for this disagreement. Dr. McLane had been a close friend and immediate neighbor of Dr. Edward Lambert, Dean Lambert's father, in Westchester. A tree branch in McLane's yard extended into Lambert's property and threatened to break windows during a storm. Without consulting McLane, Lambert ordered his gardener to saw off the limb. McLane was incensed, and the hostility carried into the next generation. Whatever the reason, the Roosevelt Managers vetoed the merger in 1910. Next, Edward



Presbyterian Hospital, Madison Avenue and 71st Street, 1872.

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institutions was tabled because of the intervention of the Great War. In 1921 a large prospective gift by Harkness was supplemented by grants from the Carnegie Corporation, the Rockefeller Foundation and the General Education Board, and the property was deeded over, the north half to Columbia's P&S and the south half to Presbyterian Hospital. Finally, in 1928, the doors of the Columbia Presbyterian Medical Center opened.

In 1767, Samuel Bard and John Jones had shared the dream of creating an academic medical center by integrating a teaching hospital with a medical school, and the New York Hospital was founded to complement the teaching at the Medical School of King's College. That integration was never fully effected, and over two centuries passed before their dreams were fulfilled in the union binding Presbyterian Hospital to the College of Physicians and Surgeons of Columbia University, the first such arrangement known to America.

The Great War

Early in 1915, less than a year after the start of World War I, many became convinced that our country would inevitably be drawn into the European war, and in July of that year several members of the surgical staff at the Presbyterian Hospital volunteered their services at the American Hospital, 30 kilometers north of Paris. Dr. George Brewer, the Director of the Surgical Service, returned from a tour of duty as medical director of the hospital, and entered into discussions with the War Department, which had already contacted 50 of the leading

Harkness resigned from the Roosevelt Board, joined the Board of Presbyterian Hospital, and took with him the multi-million dollar gift he had planned for Roosevelt.

The alliance agreement between Columbia University and its medical school, P&S, and Presbyterian Hospital was signed in 1911. Four years later, the site of the proposed Medical Center in Washington Heights (Broadway and 168th Street) was decided on, but further planning between the

hospitals in the country about organizing units to serve abroad. These contacts were considered unofficial because at the time President Wilson was opposed to mobilization. Nevertheless plans proceeded, and Dr. Brewer agreed to assemble the necessary staff for a 500-bed hospital consisting of 25 medical officers and 75 nurses.

A full complement of nurses and professionals from Presbyterian Hospital (25 medical officers, 65 nurses and six civilians) set sail from New York on May 14, 1917 and arrived in Liverpool 11 days later under Naval escort, the third such unit from the U.S. to reach Europe. Mrs. Edward Harkness presented the Presbyterian doctors with rubber, non-sinkable suits for this hazardous trans-Atlantic voyage, but their gallantry was such that the suits ended up in the hands of the nurses.

When Dr. Brewer and the Presbyterian Hospital unit reached London, a warm welcome awaited them from several medical officials, among them Sir William Osler, then living in Oxford. The unit was promptly sent to relieve the British staff in a 1,200 bed hospital at Etretat, formerly a seaside resort hotel in Normandy. The former casino contained the operating rooms and wards for the most serious cases. The remaining beds were in half a dozen nearby hotels. Over the summer months, the unit became increasingly busy—it dealt with convoys of up to 400 wounded and at times there was a critical shortage of beds. In addition to Dr. Brewer, surgical staff included Hugh Auchincloss, William Darrach, William Barclay Parsons, and Fordyce B. St. John.

In July orders came to send two operating teams, each consisting of a surgeon, an anesthesiologist, and a scrub nurse, to the front in preparation for an anticipated British offensive. Brewer and Darrach were picked to head the teams. There was serious concern on the part of the British about nurses delivering anesthesia—this American practice had not been encountered in England. But the volume of work was such that opposition could not really be mounted, and the performance of the nurses was superb. The medical stations were located four miles from the front and were subject to shelling. Dr. Darrach's quarters were obliterated by a direct hit, and it was fortunate that he had chosen to play poker somewhere else that evening.

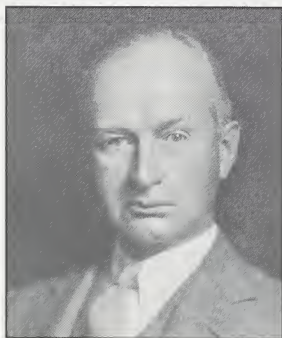
On August 29, 1917, Revere Osler, son of Sir William and great-great grandson of Paul Revere, was brought to one of the casualty stations with wounds of the chest and abdomen. In deference to Dr. Osler, who was greatly beloved, and because the wounds were critical, the news was passed to prominent surgeons in field stations along the front. The response was dramatic—Dr. Darrach operated, assisted by

Dr. Brewer. Dr. Harvey Cushing, the famed neurosurgeon from the Peter Bent Brigham Hospital in Boston, monitored the vital signs, and Dr. George Crile, the widely known academic surgeon from Cleveland, gave a direct blood transfusion. It was to no avail—Revere died the next morning. Had more been known about the treatment of thoracic trauma, he might have been saved. Osler was stricken by this loss, and never fully recovered.

In June of 1918 some of the staff, comprised almost entirely of Presbyterian Hospital personnel and headed by Dr. St. John, were detached from the base hospital at Etretat to form Mobile Hospital #2. This unit, which was designed to move rapidly to active combat sites along the front lines, was highly effective, reducing the mortality rate among the wounded by 40 percent. It saw heavy action until the end of the war in November, moving from Auteuil to the Marne, Chateaus Thierry and the Argonne. It received a Unit Commendation from General Pershing, and later from the Surgeon General of the Army, with particular mention of Dr. Brewer.

The Department of Surgery was understandably compromised by the loss of key surgeons to the Great War in Europe. But its reputation, and that of Presbyterian Hospital, were enhanced greatly overseas and in Washington by their conspicuous endeavors in support of the military.

On discharge from the Army, Auchincloss, St. John and Parsons rejoined the surgical staff at Presbyterian, and in 1921 became the core of Dr. Whipple's faculty. All were to become Service chiefs. William Darrach had assumed the Deanship at P&S in 1919 and later was to serve as Director of the Fracture Service. It was a tight group of what now might be termed "WASPS"—Ivy League educated, socially elite, financially comfortable, and for the most part politically conservative individuals, bound together by tradition and noblesse oblige. The odd man out was Allen Whipple, whose origins were somewhat different.



Dr. Hugh Auchincloss.



Dr. Fordyce B. St. John.



Dr. William Barclay Parsons, Jr.

*The Forging of an
Academic Department:
Allen Oldfather Whipple
(1921-1946)*

Allen Oldfather Whipple was born in the city of Uremia, Azerbaijan, on the slopes of the Kurdistan mountains, and educated in Tabriz. His father was a Presbyterian missionary whose work for the American Bible Society took him to all the major cities of the Middle East. Travel was by horseback, and it is alleged that the Reverend covered 28,000 miles in his peregrinations. When Whipple came to the U.S. at age 14, he was fluent in three Middle Eastern languages as well as French. His high school days were spent in Duluth, Minnesota, and his academic performance earned him admission to Princeton, from which he graduated in 1904. His father's death in Persia forced him to work his way through college. At Princeton he tutored less gifted students in Latin. He was elected to the *Daily Princetonian* his freshman year, and by graduation was voted the man "most likely to succeed."



Dr. Allen O. Whipple.

Whipple's education had been primarily in the classics, but he prepared himself for medicine by taking a prosectorship with the anatomist George Huntington at Columbia University. He graduated from P&S in 1908 and completed a two-year internship at Roosevelt

Hospital under Dr. Joseph Blake, then Professor (Chairman) of Surgery at P&S. Whipple followed Dr. Blake to Presbyterian Hospital in 1911. He continued the laboratory research on angiogenesis that he had started while in school and his standing as a surgeon and teacher advanced so rapidly that in 1921 he was simultaneously offered appointments as Chief of Surgery at Yale and Columbia. Doctors William Darrach (The Dean) and Hans Zinsser were instrumental in his choice. In 1921 Dr. Whipple was appointed the Valentine Mott Professor of Surgery at Columbia and Director of the Surgical Service at Presbyterian Hospital. He was 40 years old and had been on the staff for ten years, gradually gaining recognition in both the clinical and research spheres. His ensuing 26 years as Chairman validated his early promise. The wisdom of this gentle but firm master surgeon appears all the more remarkable as time passes. Not only did he contribute significantly to surgical science and practice, but he developed a training program for surgeons modeled largely after the system created by Halsted at Hopkins. It was the first of its kind in New York, and it served as a template for the more comprehensive and expanded residency structure devised by his successor, George Humphreys.

Whipple initially envisioned a full-time salaried staff, but was unable to implement this plan because of insufficient funding. In contrast, the various outpatient clinics he established, particularly the newly conceived Follow-up Clinic, were a major success, and he had the vision to see that Pathology and Bacteriology needed a functional relationship with the Department of Surgery. Both of these Services achieved worldwide recognition.

One hundred and twelve surgeons were fully trained under Allen Whipple's Chairmanship, and a total of 216 men and one woman served under him as house officers. The lone woman was Virginia Kneeland Frantz, the first woman to be trained in surgery at Presbyterian Hospital. Her subsequent career in the Department as Professor of Surgery was memorable. She became one of the leaders in the new field of Surgical Pathology and played a dominant role in the Department's research and teaching programs.

Whipple's Department

Whipple's surgical staff in 1921 was limited in number but not distinction. The original cadre was full-time, meaning that remuneration came entirely from University salary. This was the first

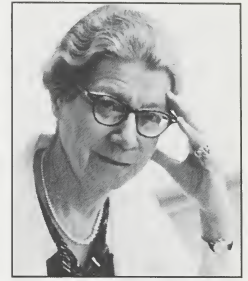
such arrangement in New York, and was consonant with the views of the trustees who believed that private practice was incompatible with the academic goals of a university. Yet it soon became apparent that the available funding was inadequate to the needs of most participants. Within three years, fees from practice were allowed as a supplement to salary on the condition that the practice be hospital-based. Thus was born the “geographical full-time” category of staff membership.

Of far greater significance was Whipple’s advocacy of a longer period of training for surgeons. His original Fellowship program of two years after internship gradually expanded to a five-year pyramidal surgical residency. Whipple’s first four senior Surgical Fellows remained with the Department throughout their careers and contributed to its continued excellence. They were Jerome P. Webster, Harold D. Harvey, Lawrence W. Sloan, and Richmond Moore.

In 1922, Dr. John Hanford joined the staff, and Dr. Charles Janssen, with special skills in colon and rectal surgery, was recruited from Depage Institute in Brussels.

Dr. Whipple was always on the lookout for unusual and clever young men. He invariably interviewed candidates himself—he befriended them, listened patiently to them, and more often than not, believed in them. His judgment on occasion went astray. A young Japanese surgeon named Matsusaki had interesting credentials—he had allegedly played on the Japanese Davis Cup tennis team while earning his medical degree. Whipple took an instant liking to him, and deployed him to the Outpatient Department where he performed minor surgical operations for the better part of a year (apparently with skill), and even married one of the Hospital’s Social Service workers. Matsusaki attracted much attention, including that of the FBI, who uncovered many previous triumphs as a medical impostor.

Another of Whipple’s appointments drew equivalent attention, that of Dr. Charles R. Drew, in 1938. Drew was an African American. There had been other blacks at P&S—four had studied there between 1830 and 1850, and Travis J. A. Johnson, of the class of 1908, was awarded a medical degree—but Drew was the first to seek training in surgery. He had a superlative academic record, first at Amherst College, then at the Medical School of McGill University, where he ranked among the top three graduating students. But he was declined admission to all of the top surgical programs in the country because of the existing racial bias. When he sought Dr. Whipple’s advice in 1937, the response was alleged to have been: “I am certain that you could do well with the average patient. But

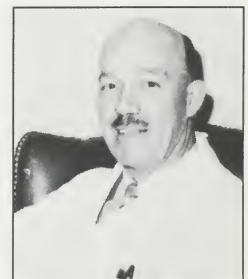


Dr. Virginia Kneeland Frantz.



Dr. Harold D. Harvey.

The book, Introduction to Surgery, written by Dr. Harold D. Harvey and Dr. Virginia Kneeland Frantz, became a classic in the field, and was widely adopted as text in the initial medical school teaching of surgical principles.



Dr. Lawrence W. Sloan.



Dr. Allen O. Whipple with Surgical Staff — March 1928.

Taken in the operating room of the old hospital just prior to moving to the new building at the Columbia Presbyterian Medical Center. First row (left to right): Wilder G. Penfield, Hugh Auchincloss, William C. Clarke, Allen O. Whipple, Fordyce B. St. John, Frederick T. Van Beuren, William Barclay Parsons, Jr. Second row (left to right): William V. Cone, Beverly C. Smith, John M. Hamford, Virginia Kneeland Frantz, Louis Bauman, Miss Doris Rykert, Charles L. Janssen, Miss Anne Penland, Rudolph N. Schullinger, Frank L. Meleney, David C. Bull, Arthur Purdy Stout.

could you, with your background, feel at ease and render competent service if one of your patients were a Morgan, an Astor, a Vanderbilt, or a Harkness? We have such patients here.” It is hard to believe that Whipple ever spoke those words, but the message was clear—the Hospital was a white preserve, and blacks were not welcome. Drew was an attractive and engaging man and persistent in his ambitions. Whipple relented, and finally, in 1938, offered Drew a position as a voluntary worker under Dr. John Scudder, Director of the Blood Bank. Drew was given a white coat and a locker, but he was not to have meals in the Hospital dining room. His performance was such in the Blood Bank that within a short time he was accepted as a dining companion by the house staff and granted a Rockefeller Fellowship for two years of surgical training. P&S gave him an academic title of Assistant Professor of Clinical Surgery. Along with his clinical duties, he involved himself in research in blood preservation and banking and earned a Doctor of Medical Science Degree for his thesis, “Banked Blood.” Whipple was so impressed by his new appointee that he arranged to have Drew in the operating room with him frequently.

The story does not end there. Drew returned to Howard University after his fellowship at Columbia and soon became a full professor of surgery and the Chairman of the Department of Surgery at

its Medical School. His national and international reputation soared, his image appeared on a memorial U.S. postage stamp, and his distinctions as an educator and clinical leader did much to promote the interests of the African-American community at large. Whipple was justly proud.

Since Drew's time, a modest number of African Americans have taken their surgical training at the CPMC, and some have achieved real distinction in their careers. At the present, the Department of Surgery can claim two African-American men of outstanding quality, Kenneth A. Forde, the Jose M. Ferrer Professor of Surgery and Vice-Chairman of the Department, and Spencer E. Amory, Chief of Surgery at the Allen Pavilion in upper Manhattan.



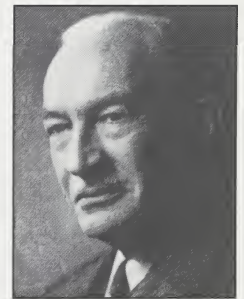
Dr. Charles R. Drew.

Growth and Diversity

During the 1930s, Whipple's long-standing interest in the function of the spleen prompted him to join with Dr. Robert H. E. (Pat) Elliott and some members of the Department of Medicine in founding the Spleen Clinic. Dr. David Cheever, of the Peter Bent Brigham Hospital in Boston, said that Whipple's work had finally "settled" the age-old problem of the circulation of the spleen and portal bed.

During Whipple's reign, Dr. Jerome P. Webster founded the Division of Plastic Surgery, providing the first formal training program in Plastic and Reconstructive Surgery in the world. Webster's graduating residents distinguished themselves in heading similar services elsewhere. The Webster Library was acclaimed as the finest private collection of books dealing with plastic surgery. It is now safely ensconced in the Health Science Library of P&S.

Dr. Webster was a slow and meticulous surgeon, a perfectionist known to have removed and reinserted more than a 100 sutures to close an operative wound, all because of a slight aesthetic flaw. He devised new procedures for a number of cosmetic defects, one of which was called a reduction mammoplasty (for reducing the size of overly large breasts). The key part of the operation, Webster explained to the intern scrubbing with him on one such case, was the free transplant of the nipple from one site to another on the reshaped breast. "Dr. Webster," the intern asked, "Have you ever lost a nipple?" "Never," replied Webster, "but once—almost." Eight hours into a reduction mammoplasty, Webster asked the nurse for the nipple which had been removed at the beginning of the procedure. It had been encased in saline-soaked gauze pads, yet now the nipple could not be



Dr. Jerome P. Webster in 1964.

The Plastic Surgery Service was founded by Dr. Jerome P. Webster, 1928. It was the first such service in the world, and the graduates of its residency training program dominated this emerging surgical specialty for over 25 years. The Webster Surgical Library, a gift to the Department by Dr. Webster, is still considered by many to be the finest private collection of plastic surgery publications in the world.



Dr. Arthur P. Stout.

The Laboratory of Surgical Pathology, established in 1911 and later to become a separate department, was first headed by Dr. William "Wild Bill" Clarke. In 1930, the directorship was taken over by Dr. Arthur Purdy Stout, aided by Drs. Virginia Kneeland Frantz, Cushman Haagensen, and others, and it became recognized as unquestionably the finest such department in the world. Stout's successor was Dr. Raffaele Lattes, a surgically trained pathologist of comparable excellence.

found—not after a careful examination of the instrument tray, nor after combing through the operating table drapes. The last load of operating room laundry had just left the Hospital on a truck heading downtown. The police were called, the truck was intercepted and returned to the Medical Center, where a protracted search miraculously recovered the lost nipple. It was promptly returned to the OR, where Dr. Webster, ever hopeful, replanted it at its new site—and it took.

Dr. Richmond Moore, later joined by Dr. George Humphreys, devoted himself to the development of thoracic surgery, and carried on laboratory studies of pulmonary physiology in animals. Dr. Arthur Blakemore was a pioneer in vascular surgery, with a special interest in the surgical treatment of aneurysms and portal hypertension. The Tumor Clinic was begun by Dr. John Hanford together with Drs. Cushman Haagensen, Arthur Purdy Stout and Virginia Kneeland Frantz.

The Surgical Pathology Laboratory, founded initially by Dr. William C. Clarke, became one of the jewels of the Department and, under Dr. Stout's subsequent leadership, became internationally renowned. Residents spent variable periods of their training there and it was customary for surgeons to review biopsy slides in person with the pathologists. At the same time the pathologists regularly participated in departmental surgical conferences. The investigative work in Surgical Pathology was also closely related to clinical problems. Dr. Haagensen had an office in the Pathology Laboratory and many of his papers and his book, *Diseases of the Breast*, were written in collaboration with Dr. Stout and other members of Surgical Pathology staff. A similar collaboration occurred between Dr. Frantz and the surgeons with a particular interest in thyroid disease, notably Drs. Parsons, Hanford, Elliott, and Sloan.

The Surgical Bacteriology Laboratory was perhaps best known worldwide. Dr. Frank Meleney, its head, had become interested in surgical infections in World War I. On Whipple's advice, he spent the year 1920 working in Dr. Hans Zinnser's bacteriology laboratory, then joined the surgical staff of the Peking University Medical College in China. Returning to Columbia in 1925, Meleney, with the support of Dr. Whipple, founded the Laboratory for Bacteriological Research within the Department of Surgery. His particular interests were in anaerobic infections and "synergistic" gangrene. Meleney's associate in the Laboratory was Balbina Johnson, and together they discovered a mold with antibiotic properties, which they named Bacitracin after Barbara Tracy, the South African girl from whom the mold was

cultured. The topical form of the antibiotic is still widely used today. Surgical residents rotated regularly in this laboratory, but were appalled by its general messiness and the possibilities of cross contamination, and Sir Alexander Fleming, after visiting Dr. Meleney in his laboratory some years later, is reputed to have said, "This is the only laboratory I have seen in the U.S. in which penicillin could have been discovered." Meleney the surgeon (as opposed to Meleney the bacteriologist) will long be remembered for his odd appearance in the Operating Room—he had devised a helmet with heavy tubing, designed to remove the surgeon's contaminated breath from the operating field. He might have been taken for an alien, and his paraphernalia provided amusement for the nurses who "by mistake" would attach the hose to the wall pressure outlet rather than suction.

A notable feature of the Department of Surgery during Dr. Whipple's quarter century of leadership was the wide range of opinions and techniques to which a trainee was exposed. A typical thyroidectomy, for example, would be completed in a half hour by Dr. Parsons, whereas the same procedure would take much longer by less skilled surgeons. And despite Dr. Haagensen's world renown and his insistence on a most meticulously performed radical mastectomy, there were always some advocates of less radical procedures on the staff. This diversity of view and the free expression thereof was an important educational feature of the residency, and happily it was carried over into subsequent administrations.

World War II: Increasing Demands

The incursion of World War II on the U.S. in 1941 had less of an effect on Allen Whipple than it did on his successor, George Humphreys. Yes, Whipple lost surgical staff to the military, and yes, he was faced with drop-outs from the house staff—but he didn't have the very difficult problem of accommodating returnees from the war without empty slots on the roster. That task was left to Humphreys.

World War II did play a disruptive part, however, in the organization of the Department of Surgery, and dealing with it called for all of the Chairman's administrative skills.

In March of 1940, 15 months before Pearl Harbor, the Surgeon General of the Army wrote to Dr. Walter Palmer, President of the Medical Board at the Medical Center, urging him to organize the Second General Hospital, thus anticipating the entry of the United

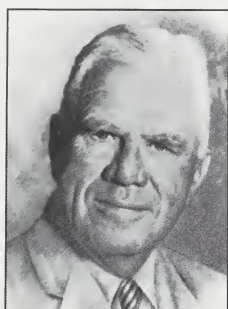


Dr. Arthur H. Blakemore.

Dr. Arthur Blakemore tackled only the most difficult of problems facing the surgeon, those of aortic aneurysms and portal hypertension. He was remarkably innovative in his approach to aneurysms, introducing heated silver wire into the aneurysmal sac to promote clotting. For portal hypertension he experimented with every form of porto-systemic shunt, and devised an intra-esophageal balloon for tamponade control of lower esophageal bleeding (Blakemore-Sengstaken balloon). Ultraviolet light was installed in his operating room to control airborne infection.



Balbina Johnson.



Dr. Frank L. Meleney.

Dr. Frank Meleney and his colleague in the Surgical Bacteriology Laboratory, Balbina Johnson, determined the origins of synergistic bacterial gangrene and, more importantly, isolated in their laboratory a mold with antibacterial properties, which they named Bacitracin. This product, alone or with other antibiotic agents, has been used topically for the control or prevention of gram positive bacterial infections.

States into World War II. Dr. William Barclay Parsons, revered Department of Surgery professor, took charge of the unit, which ultimately included 48 physicians, 6 dentists, 105 nurses, and 40 enlisted men. In January 1942 the group was assembled at Fort Meade in New Jersey and in June of that year it embarked for England. Dr. Parsons had been detached in May to serve as Surgical Consultant to the Southwest Pacific, leaving the leadership of the Surgical Service of the Second General Hospital to Dr. Rudolph Schullinger, who proved to be a superb commanding officer.

From July 1942 until April 1944, the Presbyterian Hospital unit was located in Headington, Oxford, where it ran a hospital with a capacity of approximately 1,000 beds. There it cared for the rapidly increasing U.S. forces in Britain as well as casualties from both the British and U.S. Air Forces. It also conducted clinical trials on the antibiotic penicillin. On an assignment by the National Research Council to study the use of penicillin, Dr. Whipple visited the unit in August 1943. Although Fleming had discovered penicillin in 1928, he was unable to use it clinically due to its instability. Prompted by the pressures of war, in 1939-40 an Oxford Group found a solution to the problems of penicillin stability and in 1941 the pharmaceutical industry in the United States was able to initiate the process of mass production. Thus, penicillin landed on the beaches with the troops on D-Day. Interestingly, the first clinical tests of penicillin on humans took place at the Columbia Presbyterian Medical Center in the laboratory of Martin Henry Dawson, Karl Meyer, and Gladys Hobby in October of 1940.

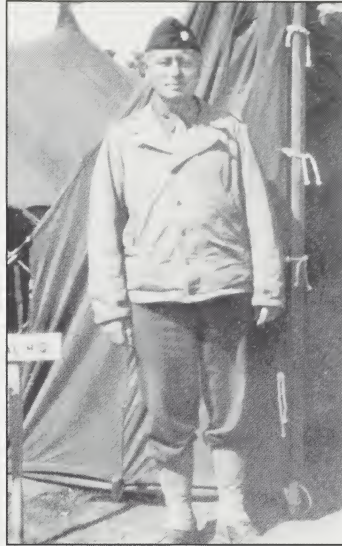
In July 1944, six weeks after D-Day, Schullinger's surgical unit crossed the Channel and set up camp in Lison, Normandy. During the next four months, it admitted 4,450 patients and performed 859 operations. On November 16th, the unit moved closer to the front, occupying a 1,000 bed French hospital in Nancy, where it remained until the end of hostilities in March of 1945. The hospital grew to 1,500 beds due to heavy casualties in the last months of the war.

In June 1942, a group of officers, including Dr. Robert Wylie, was assigned to organize a 250-bed Station Hospital. Dr. Charles Flood was the senior member of this unit. It served first in the Congo, for Leopoldville had become an air base supplying help to British forces in Egypt. Subsequently it moved to Algeria and then to southern France with the invading forces. Following the German retreat up the Rhone valley, it eventually stopped only a short distance from Nancy, where its parent institution, the Second General Hospital, was then located.

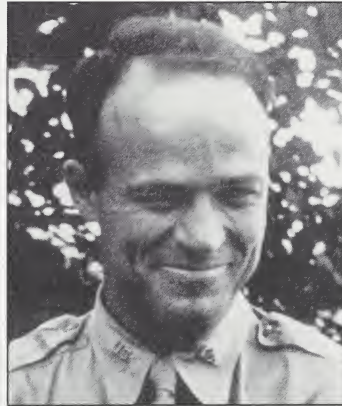
Many prominent members of the surgical staff also served in the military, including Dr. David Habif, who spent the later months of the war as a prisoner in Germany, having been captured in the Battle of the Bulge. And the post-war interns and residents are unlikely to have forgotten Dr. Milton Porter's endless but entertaining tales of naval warfare in the Pacific, including the appendectomy he performed on a destroyer, defying the alleged orders of the skipper to throw the seaman overboard.

The Indianer Club

Who can forget the Indianer Club? For those too young to remember, or too correct to be considered for membership, this association was begun by a group of CPMC residents who were making a tour of surgical clinics in Europe in the 1930s. In Germany they attended a Wild West show, and as Indian after Indian "bit the dust" in combat with cowboys or cavalry, the exclamation *Noch ein Indianer hat ben Staub gebissen* was repeated. Thereafter, this phrase became the watchword for any mishap in the course of medical duty, provided it was a creative mishap. "Stupidity unadorned" was never accepted as a qualification for admission to the Indianer Club—flair was essential. Clinical events that met these criteria were collected over the year and the authors were invited to present their cases at the annual meeting. A prize was given for the best paper or the most ingenious explanation for a mishap. The contenders came from all levels, including the professorial ranks. In the 1950s the proliferation of malpractice actions brought a rapid end to the Indianer Club meetings and to some of the fellowship they engendered.



Lt. Colonel Rudolph N. Schullinger at Lison, World War II.



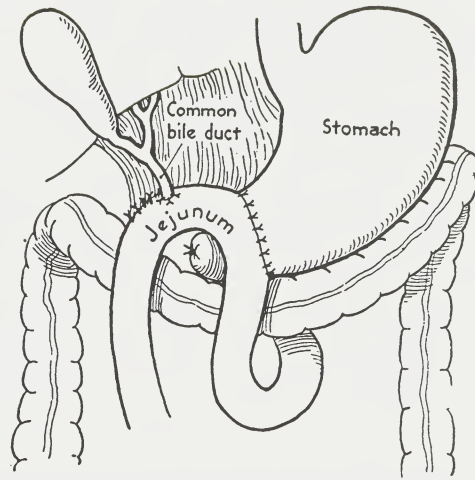
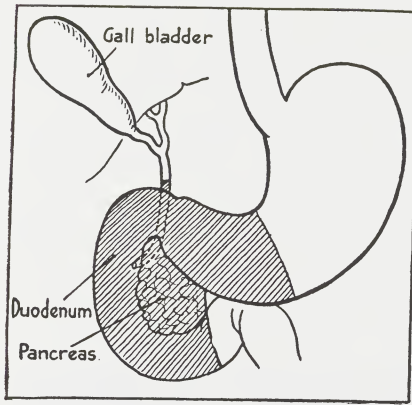
Dr. Robert H. Wylie.

Another now obsolete symbol of medical academia was Grand Rounds—that Thursday morning circus in which nurses, students, house officers, attendings, and chiefs of service all made bedside visits together on the wards. The poor patients must have been terrified by having their various plights discussed by as many as 30 or 40 white-coated purveyors of healing. And the students and house staff officers were equally terrified to have their ignorance or mistakes publicly aired by their mentors. Some of the senior group seemed to relish the role of inquisitor, while others plotted to upstage their colleagues by quoting the fine print in the latest journals. Serious discussion about the condition of the patient or the disease represented was severely limited by the possibility of misinterpretation by the patient. Intended originally to ensure that the surgical wounds were properly cared for and that every ward patient was accorded the appropriate attention, bedside Grand Rounds were gradually phased out during the Humphreys Chairmanship. Despite their ceremonious atmosphere, they proved unsuitable for free discussion and effective teaching of students and house staff.

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But one can never forget that remarkable Chief of Service, Dr. Hugh Auchincloss, Sr., who often dominated Grand Rounds. Along with his many attributes as a teacher, he had the disturbing habit of goading his residents with difficult questions, then grabbing them by their neckties while he hammered home his point. One resident, Diefendorf, was so undone by this activity that he called together the house staff to plot a response. At the next Grand Rounds, Diefendorf provoked Dr. Auchincloss into grabbing his necktie. But before the Chief had the opportunity to berate him, Diefendorf took out his bandage scissors and cut off his own tie, leaving Auchincloss with the remnant in his hand. The other house officers followed suit, cutting off their own neckties. Dr. Auchincloss unhesitatingly rose to the dramatic moment, and taking out his bandage scissors, he proceeded to cut off his own tie. The next day, every resident involved was presented with a new necktie from the Chief.

Dr. Auchincloss is remembered for other things as well. He firmly believed in the therapeutic efficacy of colon lavage, and he administered them himself to his ward patients, even, it is said, when he was wearing a tuxedo. He was the source of many innovations in the operating room, such as the use of sterilized garden gloves to provide more secure traction on the specimen being removed. He had the courage to introduce new procedures, some of them entailing a degree of risk to the patient, but would often spend the first



Dr. Whipple's first (1940) one-stage pancreaticoduodenectomy for an islet cell carcinoma of the head of the pancreas (from Annals of Surgery: 121: 847-852, 1945).

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post-operative night or two in the ward bed next to his charge to ensure that all went well.

Dr. Allen Whipple formulated the three criteria essential to the diagnosis of islet cell tumors of the pancreas with hyperinsulinism, known as the Whipple Triad. Using these criteria, he operated on 39 patients with suspected tumors and substantiated the diagnosis in 35. He was the first to use silk in pancreatic surgery, rather than catgut, and this change led to the first successful resection of a cancer of the head of a pancreas, in 1940. This operation still bears Whipple's name.

The Man Behind the (Surgical) Mask

Dr. Whipple's interests and skills were not restricted to his profession alone—if anyone ever fit the bill as a Renaissance Man, he did. An accomplished cellist, he was for many years part of a string quartet that played weekly at his home. He also painted landscapes in oil. To these skills may be added, according to his close friend Wilder Penfield, "cabinet making, rose culture, hog raising, oriental rugs, the religious history of the Nestorians, the study of surgeons' hands,

and finally certain minor vices in which he is known to indulge himself freely at the Century Club—chess, conversation at midnight, and pocket pool.”

“In the operating room,” Dr. Robert H. E. Elliott wrote in the Proceedings of the Whipple Portrait Dinner in New York on September 22, 1952, “the Professor was an accomplished technician. He was rapid, deft, and above all gentle in his handling of tissues. He believed in doing everything in the simplest and shortest way. One of his favorite admonitions was to ‘fit the operation to the patient, not the patient to the operation.’ He was fond of comparing an operation to a piece of music—there were moments when the rhythm should be slow, careful, measured—and others when the tempo should be rapid and light. I can hear him now muttering behind his mask, ‘andante, doctor, andante,’ or, conversely, ‘allegro, allegro.’ When his patience wore thin (and this was not too infrequent), he would start stamping his foot and muttering, ‘Oh, dear, oh dear,’ but I don’t believe I ever saw the Professor lose his temper in the operating room.”

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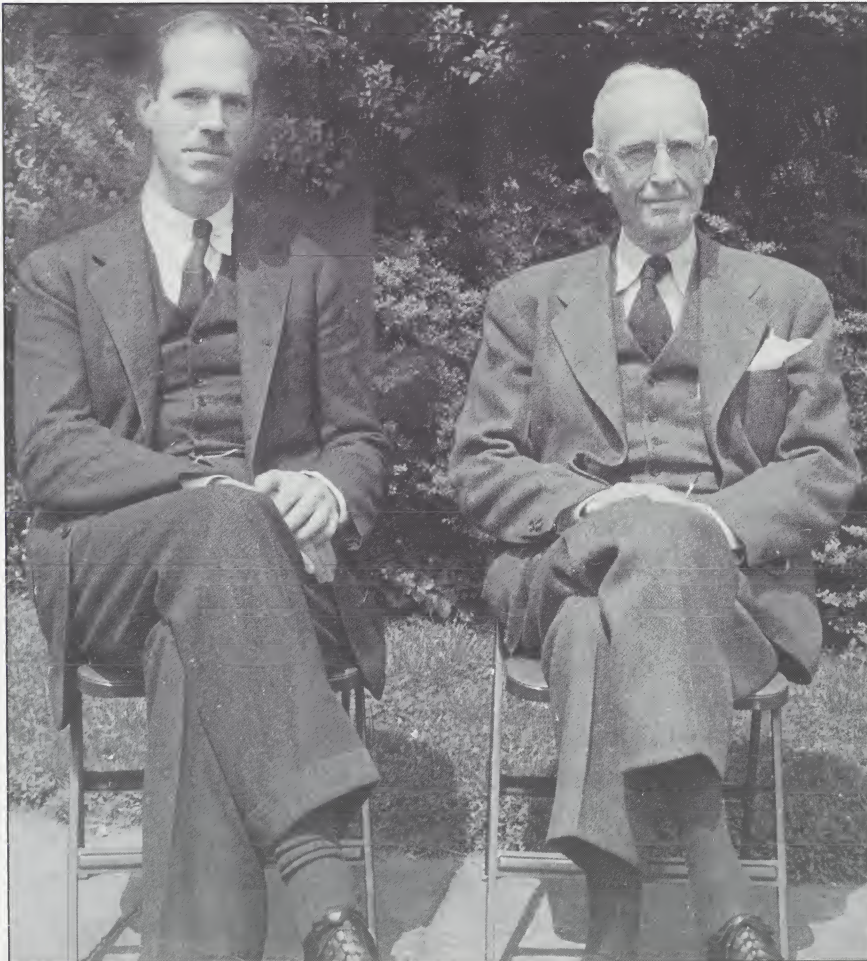
Elliott summed up, “I think the residents love him for himself rather than for any outstanding quality (of which he had so many). I know that I have always regarded him as one of those rare individuals who come along about once in a generation—tremendously gifted in a dozen different ways—scholar, artist, musician, scientist—but, perhaps above all, a great humanist and withal one of the most truly humble and fearlessly honest men I have ever known.”

Whipple engendered in his residents both enthusiasm and an interest in his origins. While scrubbing with him before the morning surgery, we heard tales of his childhood in the Middle East and his consuming passion for that part of the world. He succeeded in getting a number of his residents directly involved. Dr. Joseph McDonald became the Dean of the American University of Beirut, and Dr. Frederic Herter, after retirement, spent several years as president of that institution. Whipple also helped to establish the Medical School and the University Hospital at Pahlavi University in Shiraz, Iran, and arranged for a number of visiting professorships from Columbia before the imposition of marshal law in Iran in 1978. Dr. Robert Hiatt was fortunate to be granted this experience, as was Dr. Kenneth Forde, who was the last of the visiting Surgical Professors from Columbia.

The October 1946 issue of the *Annals of Surgery* was made up entirely of contributions by Whipple’s trainees, a fitting tribute to this remarkable man on the eve of his retirement. He had achieved recognition both nationally and internationally. A founder of

the National Board of Surgery in 1935, Dr. Whipple served as its Vice Chairman for several years thereafter. And in 1939 he was elected President of the American Surgical Association (there is no greater honor in the surgical world). A member of the Royal College of Surgeons, Dr. Whipple was also a trustee of Princeton University and the American University of Beirut.

Allen Whipple was both revered and befriended by those who trained under him, and he cared equally for his charges. He delegated responsibility as a measure of his trust in others, but he enjoyed involving himself in virtually every aspect of departmental activity. His was a very personal, hands-on chairmanship, and in the course of it he raised the Department from relative obscurity to the top rank among the country's training programs in surgery.

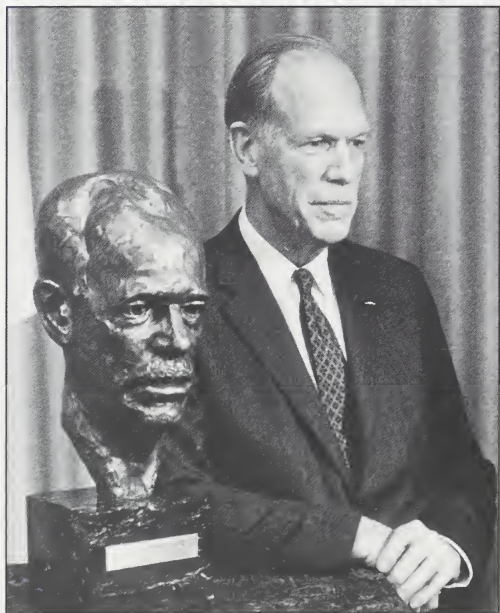


Dr. George H. Humphreys and Dr. Allen O. Whipple May, 1946.

*The Birth of Cardiothoracic
Surgery at Columbia:
George H. Humphreys II
(1946-1969)*

The appointment in 1946 of George Hoppin Humphreys II as the Valentine Mott Professor of Surgery and Chairman of the Department of Surgery at Columbia came as a surprise to some. The search committee had given serious consideration to several luminaries in the greater surgical world. Humphreys, age 43, was relatively unknown outside of New York and had been a non-tenured Assistant Professor for only four years. But Humphreys had impressive personal and academic qualities. Tall, imposing, well-spoken, and ever courteous, this Harvard-educated patrician easily passed muster as a

member of the "Gentleman's Club," which characterized Whipple's earlier entourage at Presbyterian. His manner was reserved; he had a dignified presence that commanded respect but did not invite intimacy. A private person, he was reticent to project himself forcibly in groups. But on a one-to-one basis, his charm and humor were readily evident. As to his intellect, there could be no question—he had an encyclopedic mind and the wisdom to know how to use it effectively. Moreover, he had broad experience in



*Dr. George H. Humphreys with his bust by
Dr. Henry S. F. Cooper, 1971.*

teaching, research, and practice, and the unqualified blessings of Allen Whipple. He had, in short, all the attributes necessary for a leadership role at Columbia.

The Making of a Chairman

Dr. George H. Humphreys is credited with the initiation of the Cardiac Surgery program at Columbia. He performed the first ligation of a patent ductus arteriosus in New York (the 11th such procedure in the world), and developed a superb team of cardiac surgeons whose results in both acquired and congenital cardiac disorders were without parallel. He successfully performed the first staged operation for esophageal atresia without associated tracheo-esophageal fistula, and introduced new surgical approaches for cancers of the lower third of the esophagus, and for hiatus hernia. His foremost contribution was his design (with John Lockwood) of an idealized surgical training program, thought by many to be the best that existed at the time.

Born in 1903, George Humphreys spent his first eight years in New York, then moved to Cambridge when his father received a professorial appointment in architecture at Harvard. His mother committed suicide when he was three, and though he had one older sister, he was brought up essentially as an only child. His memoirs disclose him as a “loner” during his boyhood. He hated boarding school and avoided sports and other group activities. Not until his last years at school was Humphreys recognized as someone of substance. His intelligence and his extraordinary knowledge of the natural world could not escape attention—and even earned him some respect. As his self-confidence grew, he began to involve himself more in conventional community endeavors, and he made close friends of a few classmates. With his admission to Harvard in 1921, his “loner” stigma had all but disappeared. His major was biology, but he didn’t decide to enter medicine until his senior year. In close contention was Theatre Design.

In sharp contrast to the frenzied competition of today, entry into the Harvard Medical School in 1925 was no more than a formality. Humphreys’ subsequent performance ranked him among the top three or four in his class, and he was so outstanding as a medical student that he was taken on by Edward “Pete” Churchill of the Massachusetts General Hospital in Boston, given a place in Churchill’s research laboratory and urged to apply for graduate training at the Presbyterian Hospital in New York (where Churchill had been offered a Research Professorship). Humphreys heeded this advice.

The advance billings from Harvard were not overstated. As an intern and Fellow under Allen Whipple (1930-35), Humphreys excelled in his duties; he was an industrious, dependable team player, and he showed promise not only in the clinical setting but in the research laboratories as well. Technically, he was facile. His interest in physiology found him frequently in the dog laboratory with Richmond Moore, exploring aspects of pulmonary function as it affected cardiac output.

After the completion of his Senior Residency in 1935, Humphreys learned that there were no open positions on the Hospital

staff. Although he was granted the title of Instructor in Surgery, which permitted him to teach Gross Anatomy, he could not admit patients to Presbyterian Hospital. But because Babies Hospital at that time was completely independent of Presbyterian, it was possible to gain admitting privileges there. He also was anxious to build a general surgical practice, and in 1936 he moved into the midtown office of Dr. F. Randolph Bailey, a well-established internist on the faculty at Columbia, and formally announced his availability as a surgeon. At the same time, he sought and received appointments at a number of downtown hospitals less prestigious than Presbyterian, to which he might admit patients. Despite his advantageous connection with Bailey, the development of a practice was agonizingly slow. He made house calls day and night (largely for wound care and intravenous infusions), but only rarely was he sent a patient needing operative surgery. It was a frustrating and discouraging period, particularly so because of the precarious state of his personal finances.

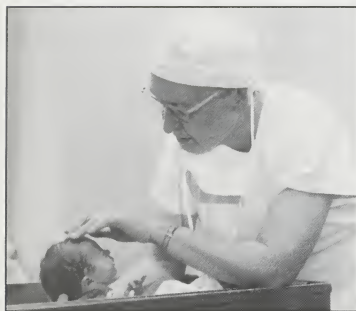
If practice was slow, Humphreys' academic activities were not.

He made daily rounds in Babies, he assiduously pursued his teaching duties at Columbia, he continued to work in the dog laboratory with Richmond Moore, and helped Arthur Blakemore with experimental studies on the treatment of aneurysms. In 1936 he joined the surgical staff of Dr. Fred Bancroft at the old City Hospital on Welfare (now Roosevelt) Island, a busy institution with an ambulance service. Operating there on a pro bono basis, Humphreys gained surgical proficiency and experience, particularly in thoracic surgery on the Hospital's tuberculosis unit, where thoracoplasties were in constant demand.

In 1937, a new City Hospital of 1,500 beds (later to be named Goldwater after Mayor Fiorello La Guardia's Commissioner of Hospitals) was nearing completion on Welfare Island at the site of the old prison. Columbia was asked to provide an academic unit, and Dr. Whipple asked Humphreys to take over this service. There was no attached salary, and the hospital was designed for the care of the



Dr. Humphreys making ward rounds.



Dr. Virginia Apgar with a newborn in 1958.

Dr. Virginia Apgar was the first female M.D. to enter the field of Anesthesiology and became Director of the Anesthesia Service in the Department of Surgery in 1945. Her work with infants at the time of delivery and her grading of an infant's immediate health risks, called the Apgar Score, became standardized world-wide. She was honored by having her image memorialized on a U.S. postage stamp.



Dr. Richmond L. Moore.

chronically ill (which meant less operative surgery), but Humphreys was authorized to select and appoint his own staff. The position, he thought, would bring him greater professional visibility and allow him to renew working ties with his colleagues at Presbyterian. Over the course of the next few months he recruited an outstanding team of surgeons. It was a well-organized and effective service, and Humphreys established himself as an able administrator and a skilled clinician and teacher.

In the summer of 1939 at the Seaside Hospital on Staten Island he encountered a child named Rose Restagno, who was in failing health, with a loud heart murmur assumed to be due to a patent ductus arteriosus. Humphreys was well versed in this entity—six years earlier, he and Richmond Moore had ligated a patent ductus arteriosus they discovered in a dog, and finding no adverse sequellae, had tried to get the support of the pediatric cardiologists for a trial of this operation on a child so afflicted. The negative response was consonant with the prevailing conservatism at P&S concerning clinical experimentation. Yet by the time Rose Restagno appeared on the scene, Dr. Robert Gross of the Children's Hospital in Boston had already performed three or four patent ductus ligations successfully. That August, Humphreys went to Boston to watch Gross perform his sixth ligation, and in September admitted Rose directly to Babies Hospital where, with the blessing of the chief pediatric cardiologist, Dr. Langman, and the assistance of Richmond Moore, he successfully ligated the patent ductus. Dr. Virginia Apgar provided the anesthesia.

This was the first such operation performed in New York, the 11th in the world, and it didn't go unnoticed. Dr. Langman was astounded by the result and began to refer children with murmurs to Humphreys. It publicly marked Columbia's entry into the field of cardiac surgery, and earned George Humphreys a membership in the New York Surgical Society.

By 1942 Dr. Humphreys was able to report favorable results from his first seven ductus ligations. With the striking improvement in anesthesia, it was now also possible to attack some congenital disorders of the esophagus (atresia, tracheo-esophageal fistula, congenital absence of the esophagus) and cancer of the esophagus in adults. Humphreys performed what he thought was the first successful staged operation for a tracheoesophageal fistula, only to find that Dr. William Ladd in Boston had just reported a similar triumph. But both were scooped by Dr. Logan Levin in Minneapolis, who later

published the successful use of this technique in a case that antedated Ladd's by a few days. But Dr. Humphreys is credited with the first recorded repair of an esophageal atresia *without* an associated tracheoesophageal fistula.

The activation of the overseas war-time Presbyterian Unit in 1941 left the Surgical Service critically short of personnel. The Columbia service at Goldwater was terminated for lack of adequate staffing and the stewardship of that unit was transferred to New York University. Humphreys thus became available for other responsibilities. In early 1942, shortly following Pearl Harbor, Whipple once again urged Humphreys not to enlist, and offered him an appointment as Assistant Professor of Surgery (non-tenured) at Columbia and Assistant Attending Surgeon at Presbyterian Hospital. At long last—seven years after completion of his Presbyterian training—George Humphreys had finally come home.

The need for him was great. With the exception of Dr. Herbert Maier, he was the only surgeon with any thoracic experience. And there were only three other attendings who had either been declared "indispensable" or spared military service—Henry Cooper, Edward Howes, and Robert (Pat) Elliott. These four "slackers" (as Cooper termed them) carried the major clinical burden on the Presbyterian Service for the next two years. Humphreys also lent his weight to the Pediatric Surgery Service. It was an extremely busy time for all (there were no longer regular summer vacations for students, or for attendings, as teaching went on the year round; and the house staff, being on an abbreviated training schedule, were less qualified), but for Humphreys, it was a relief to have most of his efforts concentrated in one geographical area. For a time he maintained his downtown office as well, and his practice grew and became lucrative. He concentrated on cardiac, thoracic, and pediatric surgery, and his efforts were recognized in ever-widening circles by membership in major local and national surgical societies. His career was taking form.

Among those impressed by Humphreys' capabilities was Willard Rappleye, Dean of P&S, who asked him to take charge of university relations with the six Columbia-affiliated hospitals, Roosevelt, Bellevue, Post-Graduate, Mt. Sinai, Montefiore, and St. Luke's. When Humphreys accepted, he was named Assistant Dean. His duties were arduous and time-consuming, but extremely rewarding.

With the end of the war in 1945, those who had been on duty in the Armed Services began to return, relieving the staff shortage and easing the clinical load. But the imminent loss to retirement of key



Dr. Robert H. E. Elliott, Jr.

members of the senior faculty, Whipple, Auchincloss, Darrach, and St. John, threatened the leadership and function of the Department, and Dean Rappleye formed a search committee to seek a successor to Whipple.

Although young and non-tenured, Humphreys had earned his spurs in a number of ways, and he had a few distinctive advantages over the other "in-house" contenders: he had proven abilities as an administrator, and he was intimately familiar with the workings of the City hospital system as well as those of the Columbia-affiliated hospitals, not to mention the complex relationships existing between P&S and Presbyterian Hospital. More importantly, he had proven abilities as a teacher, and his interests as a surgeon lay in the exciting and relatively unexplored areas of intra-thoracic and cardiovascular surgery. Finally, he was liked and respected by his colleagues.

When Humphreys' appointment was announced, it was greeted with cheers by the vast majority of the CPMC community. Even Dr. Robert Loeb of the Department of Medicine, who was known for his anti-surgery bias, was reputed to have said. "Well, that's a good appointment. Although he is a surgeon, he thinks like a medical man."

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Designing a New Department

George Humphreys had the following designs for the Department as he took over in 1946:

- Creating an "ideal" general surgical residency, based on the best elements of programs developed by Halsted at Hopkins and Whipple at Columbia.
- Effecting a balance between academic and clinical activities and selecting house staff accordingly.
- Encouraging specialty interests without allowing any one field to dominate others in terms of personnel or space or finances, i.e. Cardiac vs. Vascular vs. Oncology vs. Gastrointestinal.
- Promoting research activities, but leaving research time for residents optional, rather than mandatory. The exception would be the exposure to Surgical Pathology and Bacteriology.
- Arriving at a uniform system of faculty remuneration acceptable to all.

How he approached these goals and how successful Humphreys was in achieving his aims will be seen in the following pages.



*Dr. George H. Humphreys II and surgical attending staff.
From left: Doctors Frederic P. Herter, José M. Ferrer, John M. Kinney, Robert H. Wylie, Edward B. Self, Robert G. Bertsch, Alfred M. Markowitz, Philip D. Wiedel, Milton R. Porter, George H. Humphreys, Frederick R. Randall, Robert H. E. Elliott, Jr., Harold D. Barker, and Thomas V. Santulli, circa 1967.*

The Training Program

When asked what he considered to be his greatest contribution as Chairman, George Humphreys unhesitatingly answered, "The Training Program." Designed with the help of John Lockwood, it was based on a number of fundamental premises, the first of which was that a university department should train *both* sound clinical surgeons and future academicians without prejudice to either. In choosing his house staff, he attempted to maintain such a balance, and generally was successful.

The second premise was that the residency be rectangular in structure, rather than pyramidal, allowing identical patterns of experience and lengths of service for the general surgery residents. This resulted in high house staff morale and minimized the element of competition among the residents.

The third and self-evident premise, was that the program be progressive in terms of clinical responsibility. The initial Humphreys plan in 1946, conforming to this principle, had an 18-month internship, three new men being taken every six months and two assistant residents being chosen every six months from those

completing the internship.

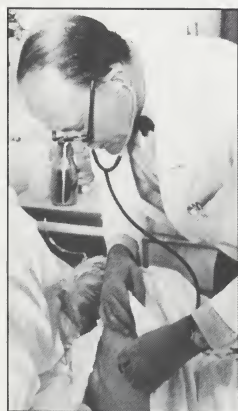
This idealized program, which included rotations on Medicine and various specialty services, was, in Humphreys' words, "the best we ever had," but it lasted only five years. Just as the demands of World War II had mandated a radical change in the Whipple residency, so the Korean War demanded accommodations in the Humphreys program. The major change was a reduction in the internship period to one year and an increase in the number of interns to 12, all of whom were taken on together in July of each year.

Without the staggered beginning, it was impossible to adhere strictly to the progressive principle. But each new year of training in Humphreys' program brought a widening of clinical responsibility and operating room experience, and attending supervision of operative procedures lessened accordingly. During the last two years of training, virtually all ward operations were carried out by senior residents alone, without hands-on attending help. Such help was, of course, available, and there was no onus associated with asking for it. On the contrary, the willingness to seek advice in the operating room was the most telling marker of a man to be trusted, whether attending or house officer. To the credit of the surgical service, this willingness to ask for help became a permanent trait of those trained in this fashion.

Despite the freedom accorded the residents, sponsorship of every surgical case by an attending was strictly enforced, and continuity of care was shared between resident and attending, resulting in what many considered to be the best surgical follow-up system in existence at the time.

Another feature of the residency program stemmed from Humphreys' conviction that the development of independent judgment was the most important goal of surgical education. As such, he encouraged a diversity of responsible approaches to clinical care and operating room technique. As promulgated by Whipple, there was no "Presbyterian" way of doing things among the 40 attendings. Rather, each graduating resident was expected to have gained the sophistication and confidence necessary to choose between a variety of treatment options.

Unfortunately, hardly a month passed without the need to revise the residency schedule, whether because of war or sickness or operational necessity. Dr. Humphreys kept up with these necessary changes by referring to what became known as the "Christmas Tree," an elaborate, multicolored chart adorning the wall of the chairman's office, which tracked the progress of each house officer through



*Dr. Philip D. Wiedel
examining a patient.*

internship and residency. The "Tree" was the brain-child of Fred Jaretzki, but Dr. Humphreys was responsible for its vagaries. As indication of house staff evolution, the Tree assumed a sanctity which its appearance hardly deserved, the careers of the house staff being tracked by colored bits of paper barely secured by thumbtacks and threatened more by a draft from an open window than by a flight of Humphreys' fancy. It was the object of collective anxieties, not to mention ill-humor, and at times the oft-repeated rumor that the Chairman spent his weekends using darts to resolve difficult scheduling problems seemed credible.



Dr. John S. Lockwood.

Departmental Structure and Staffing

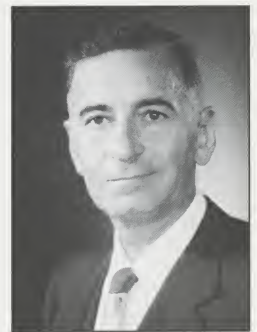
Humphreys had critical need of a full-time surgeon-scientist to organize and manage research in the Department. Moreover, he envisioned taking on a limited number of promising young faculty members who would devote themselves primarily to academic pursuits, unencumbered by practice. So he and the Dean, disregarding the then perilous state of University finances, settled in principle on full-time status for a select few new appointees. Dr. John S. Lockwood was thus recruited from Yale as Director of Research. It was a superb choice, but to offer Lockwood an adequate financial enticement the Chairman had to forfeit part of his own meager salary. At the same time, Ferdinand McAllister and David Habif were added to the staff on a full-time basis. Both were of outstanding quality, but their salaries were such that they both eventually moved into Hospital-based practice. The same occurred with Ralph Deterling, recruited from the Mayo Clinic as a vascular surgeon, and later with Tom Santulli, Jim Malm, and Fred Herter. The University-based salaries were simply inadequate. Even George Humphreys went off full-time, five years after his appointment, because the Dean could not grant him a salary increase. Only those needing help while developing a practice or those who were recruited for specific research purposes (Henry Randall, Lockwood, John Kinney, Aaron Himmelstein, and Charles Fox) remained on salary.

History had repeated itself; the limitations of the full-time system under Whipple were revisited in the Humphreys trial 25 years later and were consonant with the results of similar trials in other teaching institutions throughout the country. University salaries could not begin to approximate earnings from practice, and a true, unmodified,

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Dr. Ferdinand F. McAllister.



Dr. David V. Habif.

The Pediatric Surgical Service, under the leadership of Edward J. Donovan (1947), Thomas V. Santulli (1955-1980), Peter Altman (1981), and John N. Schullinger, developed into one of the country's foremost centers for pediatric surgery. In 1972 Santulli established an outstanding two-year residency training program. Of his 30 trainees, nine went on to become chiefs of pediatric surgical services elsewhere.

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Dr. Thomas V. Santulli.

full-time system encompassing the entire surgical staff appeared unrealizable.

To accommodate the large number of partially trained surgeons returning from the war, Humphreys transformed the two General Surgery divisions (on floors K and L, later 12 and 14) into three ward services (East, Center, West), each with male and female components and each with its own permanent chief. A balance between services in terms of teaching depth and diversity was effected by attending assignment.

With the advent of Medicare and other forms of medical insurance in the 1950s, the traditional source of ward patients for clinical teaching diminished and the use of semi-private and private patients for instruction assumed greater importance. Humphreys dealt with this problem by converting some of the ward beds into a semi-private teaching service, in which the assigned attendings received compensation from insurance fees but with the responsibility for care left primarily to the residents. This maneuver, however, did not circumvent the ethical and legal dilemma of residents giving surgical care to private patients, and the issue was further exacerbated by restrictive governmental regulations defining the responsibilities of attendings and house staff. The day of resident independence, so important in surgical training, was clearly under threat.

Two major service realignments occurred under Dr. Humphreys' chairmanship. The Pediatric Surgical Service, which had been part of the Department of Pediatrics in Babies Hospital, became amalgamated with the Department of Surgery with its own Chief of Service (Edward J. Donovan in 1947, to be succeeded by Thomas V. Santulli.) The Fracture Service left the Department of Surgery in 1947 to join the Department of Orthopedic Surgery, newly created at Columbia to coincide with the move of the Orthopedic Hospital from its original base downtown to 168th Street. This Department was headed initially by Dr. Alan deForest Smith and later by Dr. Frank Stinchfield.

Remaining administratively attached to the Department of Surgery were the Plastic, Thoracic and Head and Neck Services, each with its own independent residency training program and its own patient area in Presbyterian Hospital. A six-bed Metabolism Unit was established to study water and electrolyte balance in surgical patients.

The Humphreys empire extended well beyond the confines of Presbyterian Hospital. No fewer than nine outside institutions were teaching affiliates of the Department of Surgery during his tenure. Montefiore and Mt. Sinai played relatively minor roles. Bellevue,

Roosevelt, and St. Luke's Hospitals were actively engaged in student education. The First (Columbia) Division at Bellevue Hospital had been actively involved in resident and student teaching since the 1840's, antedating Bellevue's affiliation with Cornell, New York University, and the New York Postgraduate Medical School.

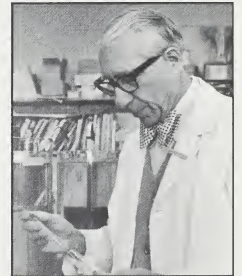
The association with the Mary Imogene Bassett Hospital in



Dr. José M. Ferrer (front row center), Director of the First (Columbia) Surgical Division at Bellevue Hospital with Attending and House Staff (1964).

Cooperstown, New York, was one of Humphreys' creations; it became a Columbia affiliate in 1948, bringing with it a notably strong academic program (Dr. E. Donnell Thomas, Chief of the Medical Service at Bassett at that time, subsequently won the Nobel Prize for his pioneer work in transplantation). In 1951, the Francis Delafield Hospital opened its doors. This Columbia-staffed, City-financed cancer hospital adjacent to the Medical Center was the creation of Dean Rappalye and Dr. Cushman Haagensen. Its first surgical chief was Dr. Joseph McDonald, followed by Dr. Fred Herter and then by Dr. Joseph Buda.

In 1963, Dean Houston Merritt was urged by the City to provide professional sponsorship for Harlem Hospital but could persuade only three P&S Departments to take up the challenge—Surgery, Orthopedics, and Psychiatry. Dr. Aubrey Maynard was the incumbent Chief of Surgery at Harlem. Humphreys had his Presbyterian attendings assume service responsibility at Harlem, and arranged for reciprocal house staff rotations at an assistant resident level. Maynard retired in 1967 and was replaced by Dr. Jose Ferrer. Unfortunately, the potential benefits of the affiliation were never fully realized, and the residency exchanges were subsequently phased out.



Dr. Charles L. Fox, Jr.

Dr. Charles Fox observed that sulfa-based antibiotics, if combined with silver, had augmented anti-bacterial effects in the treatment of superficial infections. He created a salve, known as Silvadene in the trade, which, when used topically, has since become the standard anti-microbial treatment of second and third degree burns throughout the world.

Clinical and Research Activities

GENERAL SURGERY

Many attendings shared an interest in abdominal surgery. Harold D. Harvey focused on the treatment of peptic ulcer, which in that period was considered by many a surgical disease. He developed thorough "follow-up" data on various relevant gastro-duodenal procedures and arrived at definitive conclusions as to the best surgical approach to that common ailment. The residents performed vastly more gastric resections than appendectomies. Edmund Goodman, under the auspices of Allen Whipple, spent a year of research at Cambridge University, and there developed the electrogastrogram in conjunction with Gilbert Adair. This measured the electrical potential of the stomach wall, and was used to differentiate between neoplastic and inflammatory change. He also experimented with radioactive techniques in determining the site of bleeding in the upper gastrointestinal tract. Milton Porter was the successor to Allen Whipple in the surgical attack on pancreatic cancer, aided by Herter who reported on one of the largest series of partial and total pancreatectomies in the literature. Robert Hiatt studied an isolated intestinal peptide with anti-serotonin properties, as it affected gastric emptying. He also interested himself in the causes of ulcerative colitis, and in neurogenic factors associated with congenital megacolon. Inflammatory diseases of the small bowel were studied by Frank Gump, and Kenneth Forde focused on colorectal pathology. Forde pioneered an outstanding colonoscopy program at Presbyterian Hospital.

During the Humphreys Chairmanship, perhaps the most far-reaching contribution of the Department was in the field of vascular surgery. In 1951, Dr. Arthur B. Voorhees II, a resident working in Blakemore's laboratory, made the



Dr. Edmund N. Goodman.



Dr. Milton R. Porter.



Dr. Robert B. Hiatt.

signal discovery that a synthetic fabric, Vinyon N, could be used for blood vessel replacement, thus opening up an entirely new chapter in vascular surgery. His initial report was co-authored by Fred Jaretzki. It was a momentous development, but one which received little attention at first. Prior to this, Arthur Blakemore had pioneered the surgical treatment of aortic aneurysms by the use of an electrically heated coiled wire introduced directly into the aneurysmal sac, inducing clotting. An operating room was reserved for Blakemore's aneurysm work on Saturday mornings; it was a scene that could have been taken out of *Beau Geste*, as everyone in the OR had to be protected from ultra-violet radiation (used for its antibacterial properties) by wearing French Foreign Legion garb. Working with Blakemore injured the house staff to massive bleeding. His comment, "It's not bleeding until you can hear it" took on real meaning during a Saturday morning encounter with a thoracic aneurysm, or a weekday Blakemore porta-caval shunt. He developed innovative approaches to the surgical treatment of portal hypertension (following the earlier leads of Whipple and Rousselot) and designed a balloon for tamponade control of hemorrhage from esophageal varices (the Blakemore-Sengstaken balloon). On Blakemore's retirement, the burgeoning field of vascular surgery at Presbyterian fell to Voorhees, McAllister, and Joseph Buda, and laboratory studies of portal physiology and liver regeneration were pursued by J.B. Price.

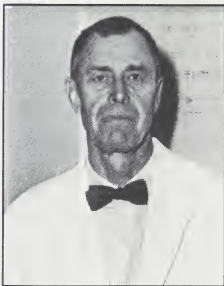
Cushman Haagensen was acclaimed worldwide for his studies of breast pathology and the role of radical mastectomy for mammary cancer. His text, *Diseases of the Breast*, was a classic in this field. For years his laboratory mouse colony became the center for investigation into the etiology of breast cancer. And his meticulous pathologic study of the correlation between lymph node metastases and prognosis argued convincingly for the use of radical mastectomy in the primary treatment of breast cancer. But there were those who felt that such a radical approach was unnecessary. Hugh Auchincloss Jr., after carefully reviewing his father's experience with breast cancer, was at the forefront of the "doubters" and 15 years later his "heresy" was vindicated by the results of large collaborative studies elsewhere.

Although radical mastectomy was largely abandoned, Cushman Haagensen's contributions to the annals of breast surgery remain



Dr. Arthur B. Voorhees while bird watching.

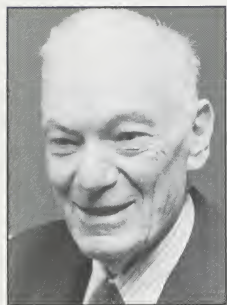
In 1951, Dr. Arthur Voorhees published a paper (with co-author Dr. Alfred Jaretzki) describing the successful bridging of arterial gaps in dogs with flexible tubes made of a synthetic mesh (Vinyon N). This material allowed the complete endothelialization of the lumen of the graft. It was a discovery of historic importance and it totally revolutionized the field of vascular surgery.



Dr. Cushman D. Haagensen.



Dr. Hugh Auchincloss, Jr.



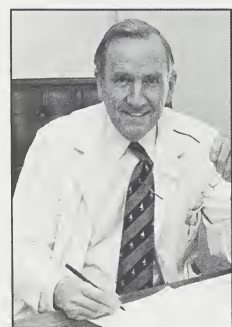
Dr. Alfred M. Markowitz.

legendary. In a different context, he had a fiery personality and a short fuse, and his five-hour radical mastectomies were apt to be livened by invectives and even instrument-throwing. As recalled by one of his residents, he once threw a clamp at a student scrub nurse for having passed him the wrong instrument. She broke into tears and left the operating room, whereupon the resident openly berated Haagensen for what he had done, and demanded an apology. Haagensen was initially incredulous, then abruptly left the OR, found the nurse, offered his sincere apologies, led her back to her post at the operating table, and spent the rest of the case taking her personally through every minute step of the procedure. Such was the nature of the man. The "character," with his childish outbursts, was, in fact, a deeply kind and caring person, and a loyal friend. He could be charming, saying, "It has been my privilege to have been of some small service to you, my dear" to one of his effusively grateful patients.

Pathological studies of lymph node tumor spread, similar to those devised by Haagensen, were carried out concurrently for cancers of the colorectum by Robert Grinnell, Charles Slanetz and Fred Herter, and of the head and neck area by Carl Feind. Later, Feind and Paul LoGerfo pioneered the use of needle biopsy in the diagnosis of thyroid tumors, a procedure that rapidly made diagnostic thyroid resections obsolete. The late Dr. Alfred M. Markowitz, who contributed significantly to the concept of this book and the history of John Jones, had a successful clinical practice specializing in diseases of the gastrointestinal tract.

Many projects related to cancer were jointly carried out between Surgery and Surgical Pathology. To mention but a few, Virginia Kneeland Frantz studied the effects of radio-iodine on thyroid tumors, John Pickren joined Haagensen in defining the role of lymph node metastases in breast cancer, Nathan Lane provided data relating the depth of invasion of melanomas and colo-rectal cancers to prognosis, and Lattes independently investigated the influence of ACTH and cortisone on wound healing. This remarkably able group of pathologists, and their well-trained residents, made the accuracy of frozen-section diagnoses close to absolute. It was a true luxury for the CPMC surgeons to have this kind of informative back-up in the operating room, not to mention the advantages to the patient.

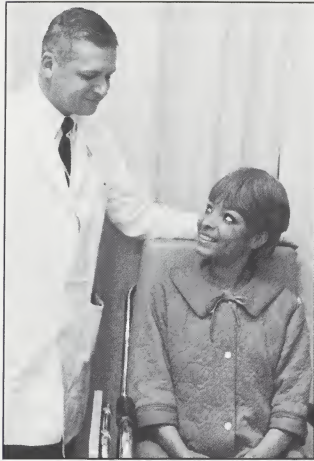
Cancer research was also carried out at Delafield Hospital. Dr. Richard L. White used radio-phosphorus uptake in tumors to gauge response to chemotherapy; sadly, he died at the peak of his investigative career (which had enormous promise) from melanoma,



Dr. Carl R. Feind.



Dr. Raffaele Lattes.



Dr. Joseph Buda with the first renal transplant patient, Miss Winfield, 1969.

the neoplasm he was in the midst of studying. His work was carried on by Herter, who was concurrently involved in trials of several new anti-cancer agents. Paul LoGerfo explored the technique of diagnostic needle-biopsy in a variety of tumors, and with Herter experimented with auto-transplants of bone marrow to protect against the effects of lethal doses of nitrogen mustard.

The emerging field of transplantation was not overlooked by Humphreys, and his appointment of Paul Russell, from the Massachusetts General Hospital, highlighted this interest. Russell initiated valuable laboratory studies in transplantation immunology. His stay, however, was regrettably short-lived (to no one's surprise he accepted the Chairmanship of the Department of Surgery at Harvard), but his interests were pursued by Joseph Buda and J. B. Price after his departure, and on November 15, 1969, Buda performed the first kidney transplant at the CPMC, using a cadaver donor. The procedure was done at the Francis Delafield Hospital, not Presbyterian, and Buda's assistants were Drs. John B. Price, Conrad Lattes and Gerry Grant. The recipient lived for 23 years.

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CARDIOTHORACIC SURGERY

Dr. Humphreys must be given credit for having launched what developed into one of the world's most eminent cardiothoracic programs. His patent ductus ligation in 1939 set the stage. Joined by Ralph Deterling, Aaron Himmelstein and Ferdinand McAllister early in his chairmanship, the team tackled other congenital disorders as well as acquired valvular disease (one of the first graduates of the Chest Residency, Albert Starr, designed an artificial aortic valve bearing his name). As candidates for cardiac surgery swelled in number and the technology became more sophisticated, Dr. Humphreys recognized the need for a dedicated director, and in 1960, he selected James R. Malm as Chief of the Cardiac Surgical Program. It was a superb appointment. Malm was an excellent clinician and administrator and he and his cohort, Frederick O. Bowman, were technically outstanding. Their surgical successes in both congenital and acquired disease were recognized widely. Dr. Henry M. Spotnitz, the head of the



*Reunion of the Bellevue-Presbyterian chest service team in 1975.
From left: Doctors Robert H. Wylie, Keith Reemtsma, George H. Humphreys II,
James R. Malm, and Frank B. Berry.*

Department's Research Committee, added major strength to the cardiac program; his success in surgical ablation of the arrhythmias was notable, as was his development of two-dimensional echocardiography for quantitative and qualitative intra-operative monitoring. Spotnitz also pioneered transvenous

pacing in infants and children. Later, under the chairmanship of Keith Reemtsma and the operational leadership of Eric Rose, the world's foremost program in heart transplantation was initiated.

The general thoracic component of the Cardiothoracic Service was also distinguished. In 1949 Dr. Robert H. Wylie was appointed Chief of the Thoracic Division following Dr. Frank Berry's retirement. He was a great clinical surgeon and teacher, a role model for all, and his legacy of excellence in patient care long survived his retirement. One of his able protégés, Dr. Alfred Jaretzki III, later won wide recognition for his delineation of the anatomy of the thymus, extending and perfecting the operation of thymectomy for myasthenia gravis, and establishing research standards for that illness. And George Humphreys, who forfeited his involvement in cardiac surgery in deference to his administrative duties, continued to explore innovative procedures for several challenging intra-thoracic problems, including funnel chest, hiatus hernia and tracheo-esophageal fistula. He introduced the left thoraco-abdominal approach to lower esophageal lesions and was the first at the CPMC to interpose jejunal segments between stomach and proximal esophagus after esophageal resections.

Perhaps the most lasting accomplishment of the cardiothoracic program under George Humphreys was its Chest Residency, encompassing cardiac and thoracic surgical training and involving both Bellevue and Presbyterian Hospitals. Graduates of this combined residency were invariably of high quality and have populated many of the country's best academic institutions.

PEDIATRIC SURGERY

Thomas V. Santulli, Chief of the Pediatric Surgical Service, oversaw significant new approaches to the surgical treatment of a number of congenital disorders, among them pyloric stenosis, meconium ileus, anomalous rotations of the gut, atresias of the esophagus, gut and common bile duct, tracheo-esophageal fistulas, megacolon, and imperforate anus. Santulli pioneered work on neonatal necrotizing enterocolitis, defining the principles of prevention, diagnosis, and treatment of this devastating disease.

John Schullinger, after completing his general training, devoted his entire career to pediatric surgery. Like his father before him, this soft-spoken, self-effacing, and infinitely kind man represented the best of our profession—his compassion and his assiduous attention to the details of patient care were models for us all.



Dr. John Schullinger.

METABOLISM UNIT

Research into the physiologic effects of surgery and surgical illness was performed in this unit. Henry Randall studied acid-base balance, using the newly developed flame photometer, and set standards for the use of fluids and metabolites during and after surgery. John Kinney analyzed the bodily changes accompanying volume depletion, infection, and other forms of surgically related illness. These studies were supported by a series of well-deserved federal grants, and achieved world acclaim. The Unit eventually merged with the adjacent Surgery/Anesthesia Intensive Care Unit.

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INTERNATIONAL ACTIVITIES

Humphreys was an avid internationalist; his sabbaticals (and many of his vacations) were spent in foreign lands, attending surgical meetings or taking part in teaching programs as a Visiting Professor. In 1951, P&S was asked to assume responsibility for the National Taiwan University medical school in Taipei. After a long visit to Taiwan, Humphreys agreed, and thereafter devoted much of his energy to the development of that school, particularly its program in cardiac surgery. His reputation there was such that in 1964 the Chaing government in Taiwan asked Humphreys to operate on Madame Chaing Kai-Shek for cholecystitis.

This Asian connection, remote as it may seem, did involve the Surgical Department. A series of Fellows from Taiwan visited Presbyterian Hospital, Dr. Malm became a consultant to the cardiac



Dr. Frederic P. Herter and Dr. John M. Kinney.



Dr. Humphreys dining with the Generalissimo and Madame Chaing Kai-Shek, Taiwan, 1951.

program in Taiwan, and the operating rooms at PH obtained the invaluable service of Flora Wang, the backbone of the cardiothoracic operating rooms. Madame Chaing was also hospitalized at the CPMC. She and her huge entourage took over the 10th and 11th floors of the Harkness Pavilion for several months. To the surgical house staff was delegated the care of the servants, many of whom were infested with worms that presented themselves at every orifice.

Cushman Haagensen was also keenly interested in international education; he trained many foreign surgical residents at PH and Delafield, and he established the Columbia-Evangelismos Cancer Clinic in Athens, Greece, to allow his Greek trainees to practice what they had been taught in America. Five years later, the clinic failed for political reasons, but it had a lasting impact on medical education in that country, and provided several members of the Presbyterian surgical staff the opportunity of visiting Greece. One of Haagensen's Turkish disciples, Dr. Husnu Goksel, became the Chief of Surgery at the University of Ankara. His principal interest was breast cancer and he dominated this field in Turkey. When he finally succeeded in having Dr. Haagensen visit him in Ankara (his life-long ambition), he held an enormous reception to which he invited every patient on whom he had carried out a radical mastectomy, using Haagensen's technique. This group of ladies, numbering in the hundreds, were then asked to disrobe to the waist and display themselves before the honored guest for his inspection and approval.

The Measure of the Man

George Humphreys firmly believed that his primary goal, as leader of an academic institution half a century ago, was to teach general surgery to general surgeons, and he did so with distinction. He took pains to maintain a critical balance between the various interests and ambitions of his staff. He could easily have dominated the 18th floor with cardiac interventions, as could Webster with plastic procedures, or Blakemore with his pioneering work on aneurysms and portal hypertension, or Voorhees with his breakthrough discovery of vascular prostheses. But he made absolutely sure that his residents

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The Surgical Metabolism Unit, established initially by John Lockwood, and headed by Henry T. Randall, David Habif, Harold Barker, and John Kinney, played an important role in Departmental research. Randall's work on fluid and electrolyte balance guided the care of patients undergoing surgery and in the postoperative period. Kinney's sophisticated studies of energy consumption and metabolic change in serious surgical disease drew wide attention internationally.

became familiar with all these specialty areas.

The research conducted under Humphreys' aegis was essentially entrepreneurial, rather than programmatic or sponsored by the Department. Humphreys was perhaps fearful of creating a research Frankenstein that would command an inordinate share of the Department's attentions and finances, and thereby losing sight of the its primary educational responsibility. Was this the right choice? Humphreys later recognized that the contributions to surgical science made by Keith Reemtsma were derived from specialization and concentration of resources, but felt that his course was right for the time. Would Humphreys do things differently today? "Absolutely not," he said. To which many of those who trained under him might add, "Amen."



Dr. Shivaji B. Bhonslay, Jr. at the Department of Surgery farewell dinner for Dr. George Humphreys on May 9, 1969.

A Postscript

It is impossible to forget George Humphreys' uncanny ability to awake suddenly from sleep during conferences to ask a critical and pointed question of the speaker or add a pithy comment to the discussion. In teaching sessions, with chalk in both hands, he could draw both lungs simultaneously on the blackboard in perfect symmetry. His dexterity was best seen in the operating room, where he invariably tied two-handed knots (as per Halsted) in contrast to our fancier "one-handers." His surgical technique was deliberate and even-paced, and if not the quickest surgeon on the 18th floor, he was arguably the best controlled. His three-dimensional sense was remarkable, and seldom, if ever, did he find himself in trouble.

Those of us who imposed on his early evening solitude in the office to question him about service problems found his deliberation remarkable. The pipe was his instrument of delay—he would take endless time packing the tobacco and using countless matches lighting up—but the resulting answers were always thoughtful and carefully worded.

Levity was not Dr. Humphreys' strongest suit, and the interns rather dreaded the prospect of an evening at his house on Park Avenue. But to the amazement and delight of all, they discovered their



"NURSES AND INTERNS SHOULDN'T THINK !"
Artist, George H. Humphreys II, 1932.

GEORGE H. HUMPHREYS II, M.D.

101-102 WASHINGTON AVENUE
NEW YORK, NEW YORK 10022

TEL: 979-9441

West Dover
Vermont 05356

July 8 1980

Dear Hugh:

I must apologize for being so slow in responding to your questions about the cartoon I once drew of your father. As you know, he had a unique talent for simultaneously endearing himself to, and exasperating his house staff. The cartoon was made in a moment of exasperation, probably during my internships in 1932. While insisting that his second assistant (me) hold the wound well open with retractors, he objected to being crowded, and had a special way of pushing the assistant out of his way with his buttocks, while looking disapprovingly over his magnifying "loup" glasses.

You are right in identifying the present maintenance drawn at the moment of

GEORGE H. HUMPHREYS II, M.D.
101-102 WASHINGTON AVENUE
NEW YORK, NEW YORK 10022
TEL: 979-9441

insertion into an employee - also of course, his specialty and one that I often used later. The identity of the others was not specific, though Miss Preland was often his aesthetist and Miss Jansen a superb instrument nurse, - always ready with the next appropriate instrument before being asked for it.

Miss Christman and Miss Langmuir rarely scrubbed even back in my intern days. The drawing was given to B. Langmuir as a peace offering during my residency, then scheduled during my residency, then infrequently roused her ire. It hung in her office on 18 until she retired, when it passed to Mrs. Gahan along with the tables of running the 18th floor. I am glad that she returned it to you and that you are giving it to the department.

Sincerely,
George Humphreys

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February 1, 1982

Keith Reemtsma, M.D.
Professor of Surgery
Columbia-Presbyterian Medical Center

Dear Keith,

The history of this marvelous cartoon is perfectly described by George. The central figure is that of my father in a characteristic, if exaggerated, pose. He was associated with the Department of Surgery from the time of its reorganization under Dr. Allen O. Whipple in 1921 until his retirement as Professor of Clinical Surgery in 1946.

On the reverse of the cartoon there is inscribed: "Merry Christmas to Miss Christman from George Humphreys. The title of this picture probably should be -- 'Nurses and interns shouldn't think!'" This was a reference to the comment my father loved to make when, having asked a factual question such as "What is this patient's blood count?" he received a reply beginning with: "I think ----." He would then respond with the phrase: "Nurses and interns shouldn't think -- (pause for effect) they should know!"

It seems altogether fitting that this work of art created with such obvious affection by the Valentine Mott Professor of Surgery (1946-1969) should become part of the memorabilia of our department.

Very sincerely,
M

Hugh Auchincloss, Jr.



Dr. George Humphreys playing chess with Dr. Somers Sturgis, his brother-in-law.

Chairman cavorting about the living room after dinner, teaching the rudiments of square-dancing. The memory of the esteemed George Humphreys doing the Virginia Reel with such agility and abandon was long-lasting. George Humphreys died on December 18, 2001 at "Littlebrook," his family home in West Dover, Vermont. He was 98.

Time had taken its toll, of course—his body was bent from arthritis, he was scarred from a number of post-retirement surgical operations, and

the police in West Dover, Vermont, considered him a threat behind the wheel of his car. But his mind had resisted any suggestion of aging. His memory, both short- and long-term, was astounding, and his conversation reflected the lively interest, the charm, and the humor of the George Humphreys we knew of old. He retained an active involvement in family and local affairs and the wider world beyond. Most recently he had been touted in the Vermont media as a grass roots activist for his successful petition to the State of Vermont to preserve the banks of a local stream from development.

What comes through in compelling fashion from George Humphreys' life story is the depth and diversity of his interests and the vitality of his intellect. It has been a rare privilege to know him as teacher and friend.

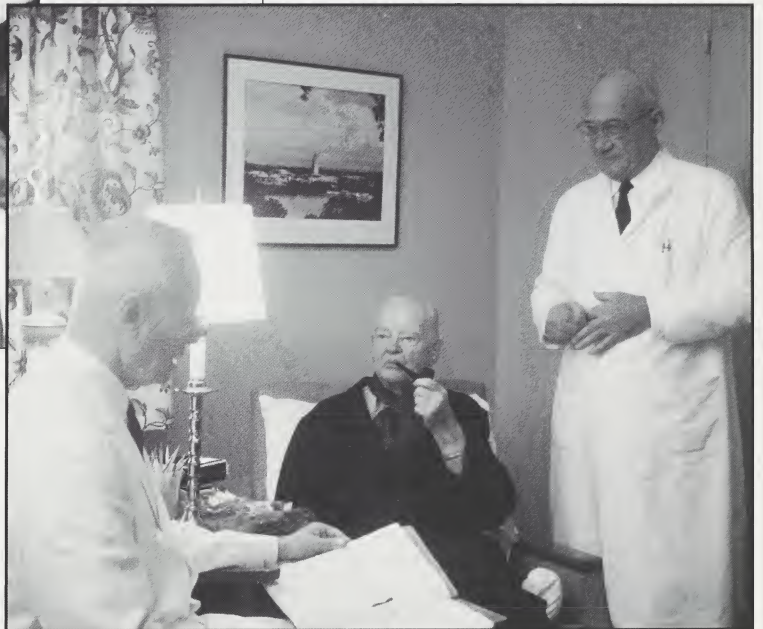
What more can one add? Only this: that the years spent under the guidance of George Humphreys were among the happiest and most rewarding of our young lives. He provided us the opportunity to grow in skills and understanding and commitment, and we leave with him our deep gratitude and affection.



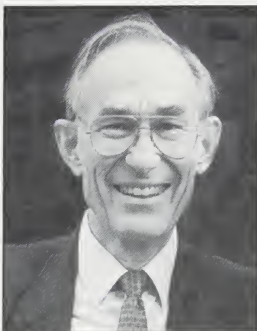
Dr. Frederic P. Herter honoring Dr. George H. Humphreys II, at a reception, May 4, 1971, with Dr. Donald W. King (Delafield Professor of Pathology), center.



Dr. George H. Humphreys II congratulating Dr. Frank E. Gump on winning the 1967 Grande Prix de Chirurgie, a short-lived sequel to the Indianer Club for the most interesting and humorous surgical case.



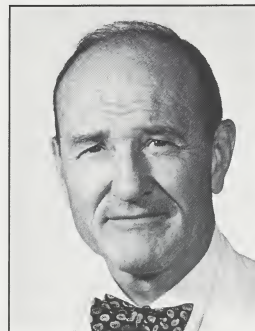
President Hoover with Dr. Rudolph N. Schullinger and Dr. Ralph Boots, Harkness Pavilion, 1962.



Dr. John B. Price, Jr.



Dr. Harold G. Barker.



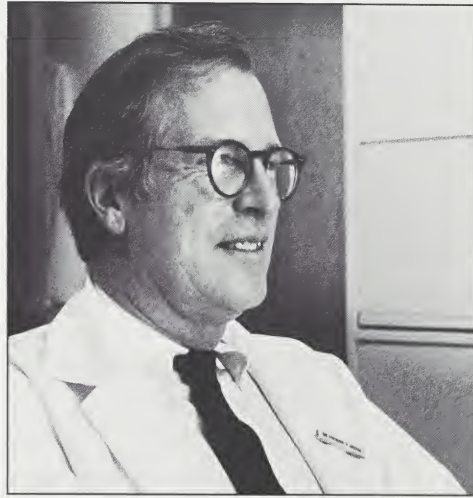
Dr. Charles W. Findlay, Jr.



Dr. Sven Kister.

The Interim Years: Frederic Herter (1969-1971)

Upon the retirement of George Humphreys in 1969, Frederic P. Herter was appointed Acting Chairman of the Department of Surgery. His interim role lasted for two years, and in that unsettled period he not only succeeded in keeping the Department happily on course, but perhaps more importantly, developed through negotiations with the University a new full-time salary structure that remains intact to this day.



Dr. Frederic P. Herter.

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There was some sentiment within the Department in favor of Herter as permanent chair, and Frank Stinchfield, as chairman of the Search Committee, tried to convince him to become an active candidate. Herter felt that his lack of experience in scientific research might well compromise his effectiveness in leading the Department. Moreover, he feared that the administrative load required of a chairman would seriously limit his clinical activities, which he was insistent on preserving. Accordingly, he removed himself from contention and urged the appointment of Keith Reemtsma. He also turned down the novel proposal by John Kinney, an established and brilliant researcher in the Department, to combine Kinney's investigative talents with the clinical skills of Herter in a joint chairmanship.

From Boston to New York

Herter's father had a distinguished career in public service, serving as a five-term Congressman from Massachusetts, Governor of that state, and Eisenhower's last Secretary of State. Herter spent his early years in Boston. He majored in Fine Arts during his three

undergraduate years at Harvard and entered medical school in the fall of 1941, only marginally prepared for the hard work to come. Three months later he was in uniform (Pearl Harbor), and after an accelerated program he graduated in 1944 with an M.D. and a commission as a First Lieutenant in the Army Medical Corps.

Partly because of his father's growing prominence in politics and partly because he abhorred the chauvinism of many of the Harvard medical faculty, Herter sought new ground. With his friends and classmates Fred Jaretzki and Bill Larsen, he ventured to New York seeking internship possibilities. It was wartime and a buyer's market existed for internship appointments. Jaretzki wanted New York Hospital and was accepted there. Herter and Larsen interviewed at Roosevelt and were asked to return the following morning to sign the necessary agreements, but it was a handshake from Dr. Hugh Auchincloss in the elevator at Presbyterian Hospital that sealed the fate of the three Harvard candidates. They had been interviewed in Whipple's office by Drs. Auchincloss, St. John, and Harvey (Whipple was in Europe), and no mention had been made of future possibilities—the exchange largely related to neckties and other symbols of social acceptability. Little did they know that evening, while enjoying *Oklahoma* on Broadway (the principal reason for the trip to New York), that the handshake was considered an acceptance. When Dr. J. C. White of Roosevelt learned of the handshake from Herter and Larsen the next morning, he promptly called his friend Dr. Fordyce B. St. John at Presbyterian, asking for clarification. The booming response from "Johnny" was: "What are my boys doing in your office?" It was clear that Presbyterian held the upper hand, and that their future training would be at that institution. "We couldn't have been more unhappy," said Herter, "but it didn't take long for us to realize how fortunate we had been."

Herter remained at Presbyterian for his full surgical training from 1944 to 1954, with two years off for military service beginning in July of 1945. His initial nine months of internship at Presbyterian were under Whipple's guidance. It was an important period for Herter, as it set the stage for his later involvement with the American University of Beirut, but to allege that he was adequately prepared for surgical duties in the Army would be an overstatement. He had performed three appendectomies and two herniorrhaphies as an intern, and he would be called upon to run a surgical service at two hospitals on the West Coast (along with gynecological surgery and medical cardiology), as well as serve as the Public Health officer in charge of nine million

civilians in southern Japan during the early occupation of that country. He, like all the other ill-prepared M.D.s in the Army, somehow muddled through and perhaps ended up doing more good than harm along the way.

Returning to civilian life in March of 1947, Herter completed his fragmented internship, then advanced through the ranks to the Senior Residency. By then Dr. Humphreys was in charge, and Herter was the first graduate of the famed Humphreys residency program. At its completion in 1954, he was offered a staff position in the Department as an Assistant Professor, but he deferred decision pending visits (kindly arranged by Humphreys) to nine other academic institutions throughout the country. The three-month tour ended where it had begun—none of the hospitals or medical schools, in Herter's eyes, compared favorably with the CPMC. Presbyterian was to assume the role of "jealous mistress" for the next 30 years.

Leading With Kindness

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Herter was a tall, soft-spoken, and approachable man who befriended others with ease. There were few with whom he didn't get along, and during his two short years as chairman he managed to keep the Department, and its attending surgical staff of 45, on track, and with few exceptions, contented. He was a respected teacher at the bedside and in the operating room, and his patients found him to be a good listener and a caring person. In later life, he was honored by both Presbyterian Hospital and Columbia University for his surgical skills and leadership.

His judgment of people was for the most part sound, but it occasionally went awry. He generally learned something from his failures, one of which occurred during his internship year. While rotating through the Fracture Service, Herter and his partner Jaretski tried to convince Dr. William Darrach to fire, or otherwise discipline a young attending who was critical of the Senior Fracture Resident. This resident was not only their mentor but their God, a man deserving of advocacy, even from a pair of lowly interns. Dr. Darrach, a distinguished former dean, one of the co-founders of the Medical Center and a lovely man to boot, treated them kindly and with the utmost respect. He took them to his office, listened attentively to their message, and thanked them effusively for their advice. They left his office very pleased with themselves—justice had been served.

Their recommendations, of course, were totally ignored. The young attending was Harrison McLaughlin, who later served with distinction as Darrach's successor as Director of the Fracture Service. To their astonishment and dismay, Herter and Jaretzki found him to be a remarkably likeable person. And the resident they had defended later found himself constantly in trouble with a number of medical societies for inappropriate professional behavior. So much for a rush to judgment. Chagrin aside, Herter learned much from Dr. Darrach about the use of kindness in dealing effectively with stupidity, or, more gently put, immaturity.

Herter used a more effective approach later in his residency, when he succeeded in having the bacteriology rotation discontinued. This task consisted of three months working with Dr. Frank Meleney in the Surgical Bacteriology Laboratory, plating petri dishes day in and day out, a useless and boring occupation. Many of the house staff complained bitterly among themselves about this waste of time but did nothing. Herter, on the other hand, worked without complaint until he had finished the rotation and then went to Dr. Humphreys, carrying a strong message. A day later, Surgical Bacteriology was permanently removed from the training schedule.

Accomplishments

At the time of Herter's appointment as acting chair, the salary structure of the Department was antiquated and divisive, and an impediment to the recruitment of new faculty. Whipple and Humphreys had both made attempts to enact a more uniform and equitable system of remuneration without success, but Herter succeeded in convincing the dean, Dr. Paul Marks, of the need for change. At this point, full-time surgical faculty members received as their sole income a salary from Columbia, which conformed with a salary scale throughout all faculties of the University, regardless of the time commitment to academic work. A full Professor of Surgery, for example, earned a salary of \$32,000 for an 11-month academic year, whereas a teacher of history, at the same rank, was paid the same for working an eight- or nine-month year, and was granted the opportunity to supplement his/her salary through work done during university vacation time. That inequity was compounded by the disparity that existed in take-home pay between the full-timers in the Department of Surgery and the practicing part-timers. A final penalty paid by the

full-time staff was the loss of patient referrals—practitioners on other services generally preferred to refer their patients to practicing counterparts in Surgery, rather than to the salaried full-time staff. Thus the full-timers not only were ill-paid, but they lost their edge in the operating room.

For all these reasons, it seemed obvious to Herter and others that the existing structure needed revision. He put into place what was then termed the Harvard Full-time System. With variations, it has survived to date, allowing Reemtsma and Rose to move the Department gradually but deliberately into a truly full-time mode. Appointees today continue to receive the University-approved base salary from which the fringe benefits and perks are calculated, but in addition they are permitted to keep a negotiated percentage of the income they earn in private practice. It doesn't take a rocket scientist to comprehend the effect of this development on recruitment and morale within the Department. Herter deserves much credit for having effected this administrative success.

During this interim two years, Herter continued to teach both house officers and students, and remained a participant in a number of investigative projects dealing with cancer. He relinquished his responsibilities as Director of Surgery at the Francis Delafield Hospital, an office he had held for eight years, but continued the research endeavors he had initiated there earlier. His practice, though not restricted to cancer, dealt largely with tumors of the gastrointestinal tract, the breast, and the soft tissues of the body. He was an active member of the New York Surgical Society and served as President of the New York Cancer Society.

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A Second Career

Herter retired from the Department in 1985, at the age of 65. This was the generally observed time in the University for packing in (no such term limit exists now), and he was anxious to get on with the writing of a book on surgery for the lay public, a much needed task. Herter had negotiated, in fact, a contract with a publisher, but this endeavor was tabled after a few months as his involvement with the American University of Beirut (AUB) became more demanding. He eventually abandoned the book project and even returned the advance. The recently published book, *Second Opinion*, by Dr. Eric Rose, ably covers the same territory, to Herter's delight.



Former AUB presidents Dr. Frederic P. Herter (left) and Dr. Calvin Plimpton (right) stand with current incumbent Dr. John Waterbury (center) on the AUB campus, Beirut, June 2001.

A Trustee of AUB since 1977, Herter assumed the Chairmanship of the Board in 1985, and became AUB's 11th President in 1987, serving in that capacity for six years. His work with the American University encompassed the Lebanese civil war (1975-1990), and during his Presidency he was prohibited from traveling to that ravaged country by the State Department, who feared another kidnapping or assassination of an AUB leader (such as had occurred in 1982 and 1984). Herter visited other countries in the Middle East and maintained reasonably satisfactory contact with the faculty and students of AUB at sites considered safe by the State Department. (Cyprus was chosen most frequently for meetings.) It was a difficult and challenging experience for Herter, rivaling in excitement his days in the operating room. The door to Lebanon reopened to Americans in 1998, and he has since made three visits to Beirut.

Why this interest in the Middle East? It was largely the doing of Allen Whipple, who talked at length to Herter about his own missionary background in Persia and Syria with particular emphasis on AUB. In 1958, Herter was invited by the Dean of Medicine at AUB (Joseph McDonald, a former surgical and plastic resident at the CPMC) to take over AUB's Department of Surgery for a year during the incumbent chairman's sabbatical leave. But the plan was called off because of the first Christian-Moslem altercation in Lebanon. The following year, however, Herter participated in a medical assembly in Beirut. He arrived bearing the title of Associate Professor of Surgery, a

promotion shamelessly extracted from Humphreys to provide the “face” so necessary in the Lebanese culture. Herter fell in love with the country and with AUB, the preeminent center of liberal education in that part of the world. Now, years past retirement, he sits on many committees of the Board of Trustees, and can vouch for the continued health and importance of that remarkable institution.

A Personal Note

Fred Herter and I have been following parallel courses for over 60 years. We met playing “house hockey” at College, became close friends at Medical School, and aside from my ten years in Cooperstown, we have worked side by side since. Different in many ways, we have somehow maintained a relationship of importance to each of us. It isn’t often that one can share confidences with absolute trust, or feel free to ask for advice from another, or, uninvited, offer advice in return. He, along with virtually all the surgical attendings and housestaff that I came in contact with, especially George Humphreys and Bob Wylie, helped me become, for better or worse, the person I am today.

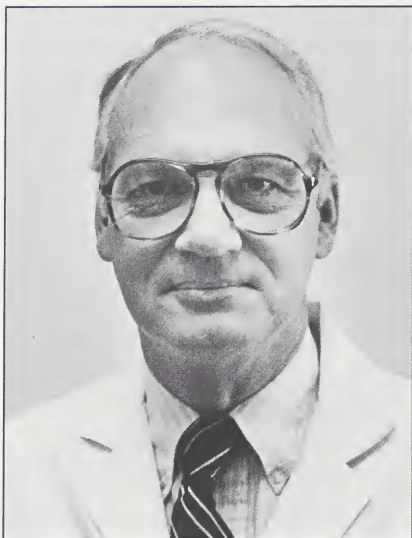
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Fred has a unique way of seeing an important and sometimes offbeat aspect of a problem that others miss. He has the remarkable ability to get unpleasant things done without provoking animosity. It is said that Fred can fire someone and get nothing but thanks in return. This perceived attribute has served him well as an interim chairman and senior advisor in the Department and as President of the American University of Beirut.

In addition to the many accomplishments recorded in this chapter, this book never would have been completed, or even developed, were it not for Fred’s patient and effective leadership.

—Alfred Jaretzki III

The Transplantation Era: Keith Reemtsma (1971-1994)



Dr. Keith Reemtsma.

Dr. Keith Reemtsma was no stranger to Washington Heights when he assumed the Chairmanship of the Department of Surgery at Columbia in 1971. Having spent almost six years in surgical training in the early 1950s under George Humphreys, he knew Presbyterian Hospital well and he had many friends on the faculty.

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But his background contrasted sharply with his predecessors' at Columbia, as did his style of management and his thoughts about the future of the Department. In his 23 years as

Chairman, Reemtsma managed to focus the prime attentions of his staff on cardiac surgery and the emerging field of transplantation, and in so doing gained the department worldwide recognition. Successes in these specialized areas were accomplished without sacrificing the Department's traditional strengths in teaching and patient care. His was a spectacular tenure.

Preparation of a Leader

Reemtsma was born and raised in the southwest. His father was a Presbyterian missionary with the Navajo Indians, and his early schooling was centered near the reservation in Arizona. An apt pupil, he applied for and received a college scholarship at Columbia, with the

expectation that he would join the V2 program (Navy) there. Then, Columbia inexplicably reneged on its offer and suggested that he attend the college nearest his home with a similar V2 program. Hence his attendance at Idaho State University in Pocatello, Idaho, where he took pre-medical studies and fulfilled the Navy requirements. Again, he excelled academically, and on the advice of a physician on the Navajo reservation, he applied to the University of Pennsylvania Medical School and was accepted. Reemtsma's fine qualities were evident—he was elected to AOA, and drew the attention of the famous pediatric surgeon Everett Koop, who later was appointed U.S. Surgeon General. Dr. Koop became his mentor, and strongly urged his protégé (who by then had opted for a career in surgery) to seek his training in New York. New York Hospital (Cornell) turned him down ("Boy, you wouldn't fit in here," he was told by his interviewer), and he was sent uptown to Presbyterian where the reception by George Humphreys and colleagues was quite different.

Reemtsma began an 18-month internship at Presbyterian in January of 1950 and completed the Chief Residency in September of 1957. His training was interrupted by a call to military service at the end of the internship. As a Lieutenant J.G., MC, in the USNR, he served for over two years on the U.S. Navy Surgical Team 16, Far East Command, spending most of this time on the Korean front in a MASH unit, sharing a tent with Dr. Frank Spencer (later to become Chairman of the Department of Surgery at NYU and also a distinguished leader in the field), and gaining valuable experience as a trauma surgeon. It was the ideal environment for someone of Reemtsma's easy-going humor, and he was quick to remind everyone on his return that he was the model for Captain Hawkeye in the M*A*S*H movie and television series.

He returned to Presbyterian Hospital in January 1954 to complete his training and soon became persuaded that cardiac surgery was the coming specialty field. Although he had no formal chest training ("I picked it up along the way"), as a resident he studied the anatomy of the conduction pathways in the hearts of embryos and human hearts with congenital malformations. In 1957 he was awarded a Doctor of Medical Science degree from Columbia for this work. His clinical competence as a house officer complimented his curiosity and innovation as an investigator. Reemtsma, on completion of what he termed "superb" training under Dr. Humphreys, was someone to watch in academic surgery.

He did not remain at Presbyterian Hospital but instead accepted a position as Assistant Professor of Surgery at Tulane in New Orleans.

His decision was a wise one. Dr. Oscar Creech, Jr., the Chairman of the Surgical Department at Tulane, was a young and dynamic leader, unfettered by tradition and anxious to build a program centered on cardiac surgery. For someone of Reemtsma's talents and ambitions this was the perfect place to be. He was given the freedom and authority to pursue his own interests (which were largely consonant with those of Creech), and the nine years he spent at Tulane were productive and happy.

Creech's early attempts to establish cardiac surgery at Tulane were met with determined resistance by the Medical Service (not unlike the situation later at Presbyterian Hospital), and candidates for cardiac procedures were hard to come by. Reemtsma quickly seized the time made available by this inactivity and directed his energies to the emerging challenges of transplantation. A dialysis unit was established and renal transplantation begun, using sibling donors. The paucity of siblings, however, made for slow progress and Reemtsma raised the startling possibility of using primate donors. Creech was responsive, and Reemtsma established a primate colony for preliminary studies, eventually carrying out 12 renal xenografts between chimpanzees and humans. The results were uneven, but in no instance did *acute* rejection of the donor organ occur.

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This daring endeavor was greeted with mixed reviews in the world press, but early criticism soon gave way to support for the program. Reemtsma's visibility in the surgical world widened accordingly. In 1966, he was promoted to a full professorship at Tulane, and it was no surprise that other universities began to show interest in him as a potential departmental chairman. That same year he was offered a position at the University of Utah College of Medicine as Professor and Head of the Department of Surgery, and he accepted.

Utah welcomed Reemtsma with open arms. He was given charge of all the surgical specialties, and he was granted not only generous research space but a free hand in recruitment. He inveigled Dr. William Kolff to leave the Cleveland Clinic to head up a new Bioengineering Institute at the Utah Medical School and pursue his work on the development of a mechanical heart. He also recruited Dr. Thomas C. King (then Provost of the University of Utah and, parenthetically, a former surgical intern at Presbyterian) to develop an educational program for surgical students and residents. Meanwhile, Reemtsma continued his involvement in transplantation research. Anti-lymphocyte globulin emerged as a new immunosuppressant, and using the rat heart as a model, he studied the efficacy of intrathoracic parallel

cardiac allografts and the effects of in-vitro radiation on allograft survival. Additionally, he investigated transplants of pancreas, thyroid, and parathyroid tissue using animal models.

Reemtsma's five years at Utah (1966-1971) were highly productive academically, the ski slopes at Alta notwithstanding. He authored or co-authored more than 40 papers during that period and his reputation as surgeon, scientist, teacher, and administrator widened. He was well prepared for the challenges ahead when he returned to New York.

Departmental Challenges

The Department of Surgery at Columbia that Reemtsma inherited in 1971 had obvious strengths. A traditional concern for responsible patient care undergirded all activities. An effective collaborative working relationship existed between Surgery and Surgical Pathology, credited to Whipple and Humphreys. The house staff training program was considered among the best in the nation, and the collegiality and esprit on the Surgical Service made this an enjoyable place to learn and work.

But conservatism was the order of the day, not only in Surgery but in the Medical School as well, and Reemtsma found this resistance to change his most formidable obstacle. New ideas were regarded with caution, if not suspicion, and the saying "Be not the first by whom the new is tried, nor yet the last to cast the old aside" characterized the institution's attitude. It had taken years for Humphreys' Cardiac Surgery program to be accepted by Medicine. The introduction of renal transplantation, with its necessary dialysis adjunct, was disallowed at Presbyterian and relegated to its neighboring affiliate, Delafield Hospital, long after such programs were active elsewhere. Operations such as radical mastectomy for breast cancer, gastrectomy for peptic ulcer, and porto-systemic shunts for portal hypertension were performed at Presbyterian while less aggressive procedures were proving as effective at other centers. Although specialty units had been organized in cardiothoracic, pediatric, and plastic surgery, and metabolic studies, the attendings were mostly "generalists," capable of teaching and practicing a wide spectrum of surgical procedures.

Despite the agreement that Herter had negotiated with the University, allowing full-time salaries to be supplemented by earnings

from practice, the surgical attending staff remained an amalgam of full-time, geographical full-time, and part-time individuals, with disparate and unequal sources of remuneration, and there was no required tithing to the Department. Furthermore, it was abundantly clear to Reemtsma that attempts to create uniformity in the way attendings were remunerated would be met with resistance.

An Independent Style

Keith Reemtsma brought a new and different presence to the Surgical Service. Tall, handsome in an angular way, he had a breezy informality about him which invited friendship. His smile came easily. He was a good listener. Rarely was he without a story or a witty comment, and he used humor effectively when arguing a point. His approach to others was never confrontational—he avoided pitched battles. Rather, he used gentle persuasion to get things done. If a substantive dispute arose in the Department, he often would resort to the appointment of an ad-hoc committee to solve or diffuse the issue. Reemtsma encouraged independence of thought and freedom of action among his attendings. If asked for help, he was generous in providing advice, ideas, or even financial support, but rarely did he impose conditions on others.

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Courageous in introducing new concepts or techniques, Reemtsma often circumvented administrative obstacles. He embodied the saying “It is better to beg forgiveness than to ask permission.” As one of his colleagues said, “He wasn’t afraid to go to the OR and try to do an operation that had never been done before. Usually things turned out pretty well. He had good judgment about what was acceptable in clinical research.” The initiation of cardiac transplantation was accomplished with little institutional disruption. When Dr. Felix Demartini, the President of the Hospital, learned that heart transplants were being done, he was astonished and confronted Reemtsma directly. The alleged rejoinder was. “Come on, Demo, some of these cardiac patients on whom we operate require four valve replacements.” This was characteristic of his management style; Reemtsma was low key, non-threatening and likeable, even when confronted.

Reemtsma was most comfortable dealing with others on a one-on-one basis or in small groups. He rarely held meetings of the attendings, and he seemed uneasy in the public leadership role or as team captain. He never pontificated or demanded center stage. He

delegated responsibility freely and unreservedly. He had a disarming intelligence but never allowed it to discomfort others. Once an appointment or an assignment had been made, he rarely superimposed his authority or questioned decisions. This hands-off administrative style demanded both judgment and self-assurance—he had both. Whether or not one was always comfortable with his style, Reemtsma had a remarkable ability to set goals for the Department and develop the team structure necessary to realize them.



Dr. Eric A. Rose performing first pediatric heart transplant with Dr. Keith Reemtsma looking on. Nurse in lower left is Flora Wang. She was recruited by Dr. Humphreys from Taiwan. The Robot Flora II was named after her (see picture on page 116).

Departmental Goals

Reemtsma summarized his goals as Chairman this way: "When I came here I had the view that this should be the premier medical center in the country. With a fine University and such an outstanding hospital, it should be possible to become that. It seemed to me that we

had to anticipate developments in medicine.” Reemtsma listed the invigoration of research as his first concern, particularly in those fields closest to his interests, namely transplantation and cardiac surgery. He cited the need to further strengthen the residency training program, and move towards greater specialization in clinical activity. He foresaw the development of a number of relatively autonomous, system-specific units or centers of excellence, where efforts could be focused and monitored effectively. Lastly, he hoped to create a full-time department with a uniform plan of attending remuneration.

How did he address these challenges and with what success?

Education and Training

Strong as the surgical residency training program was, Reemtsma was concerned by the fact that performance in the in-service examinations was less than excellent and that not all the graduates passed the written part of their Board examinations on their first try. He sensed the need for more formal education during the training period. To this end, he recruited his erstwhile colleague at Utah, Thomas King, to take charge of the residency program. King was widely respected for his views on surgical education. He was an able administrator (having risen from Associate Dean to Provost to Acting President of the University of Utah), and he had a genuine interest in supporting and nourishing young people. He believed that much of the onus for house staff education should be placed with the residents themselves, and he encouraged individuals to participate in the design and implementation of their own programs. He would say, “You are adults, you are professionals—take these specifications and come back with a plan that best suits our institutional obligations and goals, yet takes care of your own needs.” Classroom teaching sessions covering all aspects of surgery were instituted, as well as literature reviews. While house staff performance on National Board and in-service examinations improved, the students at P&S also benefited in other ways. They found the clerkship in Surgery to be among their most valuable experiences at medical school and were attracted to surgical careers in increasing numbers.

Although research experience was not considered mandatory, it was encouraged in the training schedule. Reemtsma made start-up funding for investigative projects available.

There were changes in some of the residency rotations. With the

previous dissolution of the First (Columbia) Division at Bellevue Hospital in 1967 and the later closing of Francis Delafield Hospital, the house staff lost important exposure to differing surgical environments. To the dismay of many, Reemtsma eliminated the long established rotation on Surgical Pathology was discontinued. But rotations in Vascular Surgery and Transplantation were introduced in keeping with the newer developments in surgery, and an affiliation was begun with the Overlook Hospital in Summit, New Jersey, where middle level and junior residents gained training experience in a community setting.

Faculty and Administration

Reemtsma envisioned a full-time faculty operating under a uniform system of compensation. Such a program existed at Hopkins, Stanford, Chicago, Yale, and other institutions, and he sought to convince his staff of the merits of this arrangement. He even sent



From left: Dr. Thomas C. King, Dr. Keith Reemtsma, and Craig Evans, Business Manager of the Department.

members of the Department to Duke, Rochester, and Harvard to learn how they dealt with this issue. But his persuasive measures met with resistance, and he resigned himself to the simpler expedient of limiting new appointees to a geographical full-time status in which clinical practice and professional fees were used to supplant or supplement University salaries. The financial structure put in place by Herter was maintained. All fees from practice were turned over to Columbia via the Department and the Dean's office. Salaries were determined by the Chairman on the basis of contributions from practice, teaching, research and administrative responsibilities. And fringe benefits were based

on a salary scale existing at the University. This system was acceptable to most of the staff, as was an imposed five percent tithe to the Department from earnings.

Reemtsma's efforts to create further "centers of excellence" other than in Cardiac Surgery and Transplantation were not fully realized, but group interests in vascular surgery, metabolism, oncology, breast and colo-rectal surgery (including flexible endoscopy) were gradually organized and eventually identified as "Divisions" that functioned with a degree of operational, if not financial, autonomy.

The Departmental administration was centralized and strengthened by the appointment of Craig Evans as Business Manager. This effectively relieved the Chairman of many of the cumbersome chores usually associated with that position. Evans remained in office throughout Reemtsma's term. His value to the Department was significant.

Clinical and Research Activities

Reemtsma's prime goal was to revitalize research in all departmental activities and to strengthen the bond between basic and clinical science. These goals were achieved brilliantly in the fields of cardiac surgery and transplantation. In 1971, Reemtsma recruited Dr. Mark A. Hardy from the Albert Einstein Medical School to direct the transplantation program. Hardy had extensive experience in renal dialysis and transplantation, and with the help of the Department of Medicine he quickly set about developing a dialysis unit in preparation for entry into the renal transplant field. Reemtsma gave Hardy full authority, saying, "I'll support you but won't be looking over your shoulder all the time."

The program moved forward rapidly under Hardy's able leadership. As the volume of kidney transplants burgeoned, relevant studies on rejection phenomena and immunosuppression were being carried out in the laboratory. Hardy focused on the effects of irradiation on donor organs and lymphocyte activity pre- and post-transplant. Dr. Nicole Suci-Foca, a Reemtsma recruit from the Department of Pathology, established a comprehensive laboratory of immunology where lymphocyte activity was studied in transplant recipients as well as in patients with cancer and auto-immune disease, using mixed lymphocyte culture (MLC) and other sophisticated techniques. She remains active today and is a scientist of recognized distinction. Dr. Collin Weber, a young staff surgeon, was enticed by Reemtsma to begin laboratory work on the feasibility of functional pancreatic islet cell transplants, the ultimate goal being that of diabetic control following pancreatic resection. Although the experimental work in animals was promising and eventually led to trials in humans, success was not achieved until two months before Reemtsma's death, by a group in Edmonton, Alberta. Despite his terminal illness, Reemtsma was overjoyed by this news. He deserves credit for the concept of diabetic

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*Nicole Suci-Foca, Ph.D.,
Professor of Clinical Pathology.*

control through islet cell transplantation and for pursuing this goal in the laboratory with such determination. His and Weber's pioneering work were determinants in the final triumph.

Other organ or tissue transplants came under investigation, first



Cardiothoracic Section, 1992. From left: Doctors Henry M. Spotnitz, Craig R. Smith, Robert E. Michler, Eric A. Rose, Jan M. Quaegebeur.

in the laboratory and then in the clinic, including those of the thyroid and parathyroid glands, the liver, the heart and lung (together and then as separate entities). Many members of the Department became involved in these lab investigations and clinical trials, among them Joseph Buda, Richard Weil, Craig Smith, George Todd, Roman Nowygrod, Carl Feind, John Chabot, and S. F. Oluwole.

It was an intense and broad-based endeavor, and the next few years saw the Department evolve into a highly

acclaimed center for transplantation and immunologic research. Credit for this development belongs foremost to Reemtsma's vision, but the contributing roles of Hardy and Suciu-Foca cannot be over-emphasized.

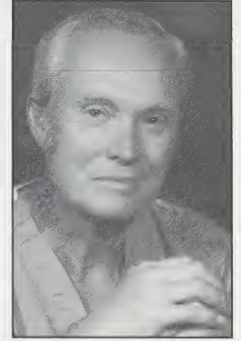
How Reemtsma moved into the field of cardiac transplantation is an interesting lesson in quiet perseverance. Many centers had initiated such programs, but by 1977, because of early failures and the paucity of donors, heart transplantation had been all but abandoned. Stanford and the University of Virginia at Richmond were among the only institutions continuing to do this work. Reemtsma was undeterred. He was convinced that the challenges of rejection could in time be overcome and extensive preliminary work in the laboratory suggested that the technical aspects were manageable. But the major hurdle was putting together a team of totally committed specialists, not merely surgeons, cardiologists, immunologists, nurses, and anesthesiologists, but individuals knowledgeable about donor harvesting and the logistics of transporting donor hearts to the Hospital expeditiously. In addition to extensive planning, determination and patience, it took advanced administrative skills to launch so ambitious a program. Reemtsma proved up to the challenge. In 1977, he and Richard Edie successfully carried out the first heart transplant at Presbyterian Hospital.

As the volume of heart transplants mounted, and the future of the program appeared assured, the leadership of the transplant team

was gradually turned over to younger members of the Department, relieving the Chairman of some of his hands-on involvement. Reemtsma urged an outstanding graduate of the cardiothoracic residency, Eric Rose, to get involved in the heart transplant program. Rose initially was disinterested, but after spending three months at Stanford under the tutelage of Norman Shumway, at Reemtsma's behest, he returned to Presbyterian eager to accept the position of director of the program. Rose was a superb surrogate to Reemtsma, and the program grew in magnitude and quality (as of this writing over 1,400 heart transplants have been performed at Presbyterian Hospital, with results that today are the envy of institutions worldwide).

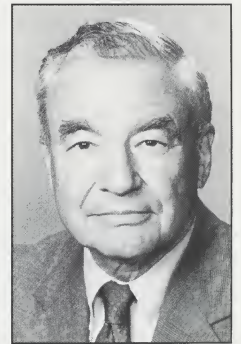
The social and ethical problems posed by transplantation, and particularly heterotransplantation, did not escape Reemtsma's attention. With countless thousands of seriously ill patients waiting for an appropriate transplant donor, how did one establish priorities among the recipients with donor organs in such short supply? Should the sickest come first, or those with the best chance of long-term gain? And should consideration be given to the ability of a possible recipient to pay the expenses of transplantation? These, and many other related questions, called for high intelligence, judgment and humanity—qualities harder to come by, perhaps, than surgical skill and an understanding of immunology. Reemtsma played a leadership role nationally in tackling these critical and taxing problems.

If transplantation became recognized as the prime center of excellence in the Department, the cardiothoracic surgery program, begun by Humphreys and augmented under Reemtsma's chairmanship, was no less notable. Its residency was outstanding, producing graduates of such caliber that many went on to head similar programs elsewhere. James Malm, appointed by Humphreys as chief of this service, and his colleague, Frederick Bowman, were extremely able cardiac surgeons. Not only were they essential in the transplant work, but their skills in the operating room in the treatment of both congenital and acquired heart disorders and in revascularization procedures became almost legendary. One of their earliest accomplishments was an extraordinary run of 50 consecutive operations for Tetralogy of Fallot without mortality at a time when the mortality rate for this procedure was still very high. Henry Spotnitz, the head of the Department's Research Committee, added strength to the cardiac service; his studies of conduction pathways in the heart were notable as were his refinements in cardiopulmonary by-pass techniques. David Bregman, a Reemtsma

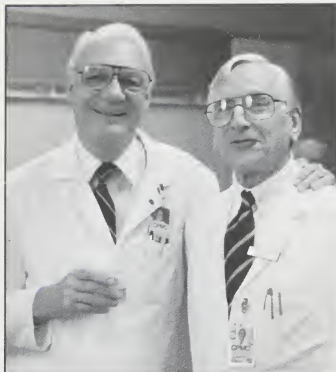


Dr. James R. Malm.

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*Dr. Frederick O.
Bowman, Jr.*



Doctors Keith Reemtsma
and Alfred Jaretzki III.

appointee, introduced the use of intra-aortic balloon counter pulsation methods to provide circulatory assistance to failing hearts and to treat life-threatening pulmonary embolism. Craig Smith, another Reemtsma recruit, became active in both cardiac and pulmonary surgery. He was an important member of Rose's heart transplant team and was largely responsible for combined heart and lung transplants.

Non-cardiothoracic surgery fell largely to the hands of Alfred Jaretzki III after Robert Wylie's retirement, and he was joined by Tom King and Charles Findlay and later by David Carberry, an accomplished pulmonary surgeon. Jaretzki was a fine teacher, a perfectionist in patient care and in operating room technique. Nothing was left to chance. His anatomical studies of the thymus were without parallel, and his extended and carefully executed thymectomy for myasthenia gravis became the model for surgical intervention in this disease.

With cardiac surgery and transplantation emerging as the major programs in the Department, there was the perception among some that general surgery (as defined in the Humphreys era) was being neglected. Reemtsma would counter with the now familiar question, "What is general surgery?" and reaffirm his initial goal of creating centers of excellence among the specialty interests falling under that rubric. "I did my best," he states in characterizing his efforts to foster and support such specialty activities, but he concedes that he was less than satisfied by some of the results.

His disappointment is not fully warranted. Specialty groups were identified and to an extent organized by their functions. The Vascular Service, headed by George Todd and manned by Buda, Price, Nowygrod, and Benvenisty, was active and productive clinically. The Breast Service, inherited from Haagensen and Sven Kister and led by Alison Estabrook, was strengthened by the Reemtsma appointment of Freya Schnabel, and David Kinne was later recruited from Memorial. A luminary in the field of breast surgery, Kinne was a signal addition to the Department. Head and neck surgery remained under the leadership of Carl Feind, who was strongly supported by Paul LoGerfo and John Chabot. Avram Cooperman was appointed to bring strength to gastrointestinal surgery; his principal interest was pancreatic surgery, and he remained just long enough to allow John Chabot to dominate that field.

Flexible endoscopy in colonic disorders was pioneered by Kenneth Forde, assisted by Drs. Michael Treat and R. Lawrence

Dr. Alfred Jaretzki III, has become a world leader in the surgical treatment of the myasthenia gravis, having designed and perfected the operation for total removal of the thymus gland, and more recently, having collaborated in defining the criteria by which results in the treatment of this disease can be more accurately evaluated.

Whelan. This program grew rapidly in size and reputation. Treat carried out extensive studies of videoscopic techniques in the laboratory, and towards the end of Reemtsma's term several members of the Department were performing laparoscopic cholecystectomies, herniorrhaphies, appendectomies, and colon resections. The first laparoscopic cholecystectomy at the CPMC was performed by Drs. Kenneth Forde and Spencer Amory at the Allen Pavilion in 1990, assisted by Dr. Ganepola from the Harlem Hospital Department of Surgery.

John Kinney's work in the Metabolism Unit on critical surgical illness continued with solid support from Reemtsma and assumed an international importance. The Pediatric Surgical Service flourished under the leadership of Peter Altman, a Reemtsma appointee, ably aided by John Schullinger, a veteran of the previous administration. In the late 1980s Reemtsma promoted Same-Day Surgery, a



Dr. Keith Reemtsma and Dr. R. Peter Altman.

phenomenon becoming popular nationwide because of its impact on the economics of medical care. Virtually all minor surgical procedures were thenceforth performed in the hospital but on an out-patient basis. Reemtsma's final act as Chairman was his creation of the International Center for Health Outcomes and Innovative Research (InCHOIR).

To head this program, he made the auspicious appointment of Annetine Gelijns, a

well-recognized expert in this new field. InCHOIR's mission is threefold: 1) undertake clinical outcomes research, including research on patient preferences, quality of life, and cost-effectiveness vis-à-vis traditional clinical end points, such as mortality; 2) devise quality improvement programs on the basis of the data generated from the above studies; and 3) develop policy analysis of issues surrounding the development, introduction and use of medical technology. Given time, this multi-faceted investigation of surgical results as modified by economic, social, ethical and scientific influences, might well be ranked alongside Reemtsma's major contributions to cardiac and transplant surgery.



Dr. Kenneth A. Forde.

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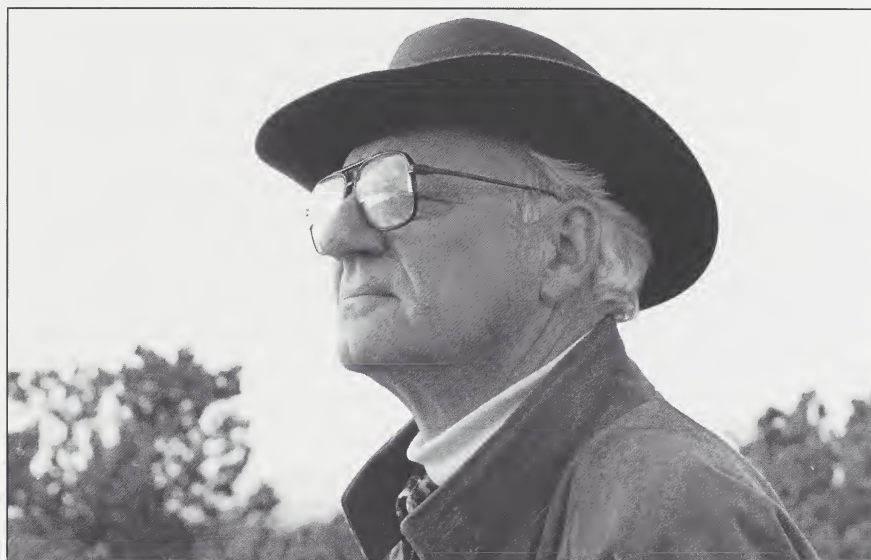


Dr. Keith Reemtsma and Annetine C. Gelijns, Ph.D.

A Farewell

Keith Reemtsma died on June 23, 2000 after a long struggle with liver cancer. At his funeral at the Cathedral of St. John the Divine, throngs of family, friends, colleagues, and students gathered to give thanks for the life of this remarkable man. The cover of the funeral program cited a poem by Emily Dickinson, "I Dwell in Possibility." No words could have been more appropriate to the occasion, for Reemtsma had lived his entire professional life at that exciting interface

With the help of Dr. Mark Hardy as Director of the Transplantation Service, and with the basic immunological studies of Dr. Nicole Suciu-Foca guiding the treatment of organ rejection and the use of immunosuppressive drugs, Dr. Keith Reemtsma developed a world-recognized center for transplantation, involving many organ systems. The heart transplant program has been without equal. Transplantation of other organs, liver, lung, heart-lung, kidney, and pancreas, have been studied in both laboratory and clinical settings. Reemtsma's and Collin Weber's work with pancreatic islet cell transplants for the control of diabetes mellitus led to the recently achieved success in humans.



Dr. Keith Reemtsma off duty.

between the known and the unknown. This called for both vision and courage. He had a surfeit of each.

His career in surgery cannot be characterized as anything less than brilliant. It has been recognized as such by his many awards and his prominence in surgical circles. He served as President of the American Association for Thoracic Surgery and of the Society of Clinical Surgery. He was First Vice-President of the American Surgical Association, Director of the American Board of Surgery, and was presented the lifetime achievement award from the International Society of Heart and Lung Transplantation. The surgical literature also bears witness to Reemtsma's distinction—he wrote 37 book chapters on a wide variety of topics, and he authored or co-authored over 370 articles in refereed journals.

His goals as Chairman were in large part realized. Departing from the traditional emphasis of his predecessors on the broad and balanced training of the general surgeon, Reemtsma challenged the validity of general surgery as an entity, and concluded that advances in surgical science and practice were best achieved by specialization, and by focusing the talents and resources of the Department on one or two such specialties. This concentration of effort resulted in the world's



Dr. Keith Reemtsma and Dr. Eric A. Rose.

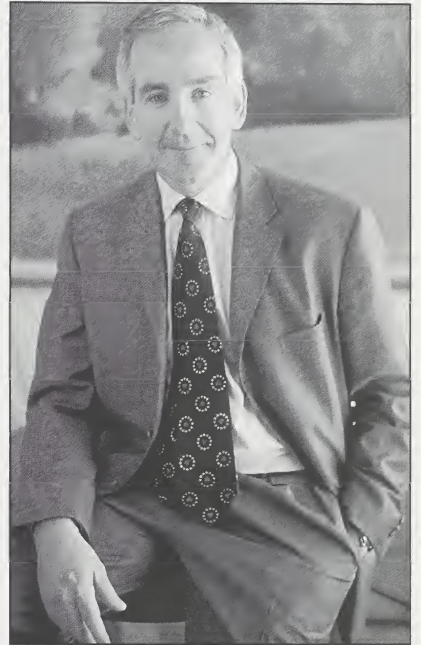
largest heart transplantation program, and arguably the best such program in the world. Significant advances in the approaches to xenografting and pancreatic islet-cell transplantation were made, as well. And these accomplishments were effected without losing sight of the Department's primary responsibility for teaching and patient care.

While the surgical world will honor him for his vision, his creativity, and his astounding achievements in the world of transplantation, we shall remember him foremost as a warm and giving friend whose door was always open and who, even on the darkest days, cheered us on with his infectious humor and left us with something of interest to ponder. His intellectual curiosity was boundless; he could converse about science or politics or social conflict or the fortunes of the New York Giants with equal enthusiasm and intensity. He read voraciously, on strangely diverse subjects, and his familiarity with the theater and visual arts was more than casual. He developed a scholarly attachment to the life and works of Vermeer, a fellow Dutchman. But New York was perhaps Keith Reemtsma's greatest passion, and as he looked down at the city from Washington Heights, or from his aerie atop the Beresford with his wife, Judy, at his side, his happiness was unmistakable.

At all levels, and in every context, he will truly be missed.

The Information Age: Eric A. Rose (1994 -)

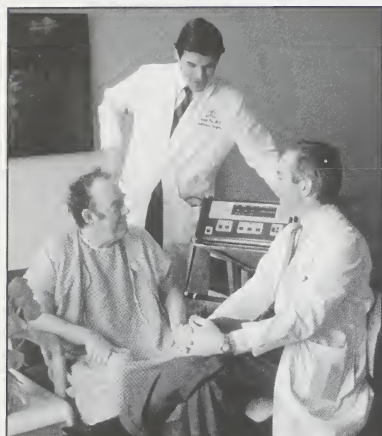
If Keith Reemtsma quietly turned the direction of the Department towards specialization during his 23 years at the helm, Eric Rose led a prompt and profound reorganization in management as he assumed the chair in 1994. This change was considered essential if the Department of Surgery was to maintain its leadership role in the complex new world of technological advancement, and at the same time adapt its academic programs to the equally turbulent areas of hospital financing and the delivery of medical care. Likening an academic surgical department to “a structured, entrepreneurial business culture,” Rose applied business practices and the latest informational technology to the organization of the Department. He hoped to improve operational efficiency and academic productivity and at the same time strengthen the departmental financial picture through grant acquisition and the widening of surgical markets. He invoked consumerism, terming both the recipients of medical care and the managed care organizations as consumers to be treated deferentially. An ambitious task, it was met with some resistance from the few remaining traditionalists in the faculty. But Rose displayed impressive administrative skills and engaged everyone in the Department, including attendings, residents, students, nurses, and technicians in this plan. In the end the new world of “informatics” was accepted, even by those whose cultural leanings were forged by Whipple and Humphreys. Rose was ideally suited for such a transition.



Dr. Eric A. Rose.

The Early Years

Rose is a born and bred New Yorker. His father was a business manager for a group of 90 musicians. An outstanding academic record in high school gained Rose admission to Columbia College, from

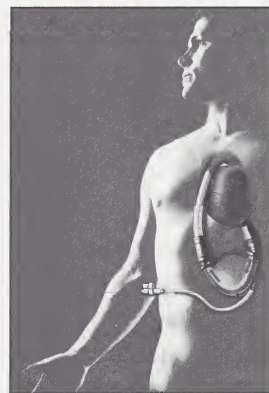


Dr. Mehmet Oz and Dr. Eric A. Rose (seated) with the first patient in whom LVAD was placed.

which he graduated Summa Cum Laude in 1971, a Phi Beta Kappa electee. In 1975, he received an M.D. degree with honors (AOA) from P&S, and was accepted as an intern in surgery at Presbyterian Hospital. Full residencies in general and cardiothoracic surgery followed in the next six years, during which he twice received the Blakemore Prize for surgical research. Upon completion of his formal training, he took his only sabbatical from Columbia, spending three months at Stanford with Dr. Norman Shumway, the leader in the field of heart transplantation. As Reemtsma had hoped, Rose returned to Presbyterian a total convert to the possibilities offered by this new and exciting area in transplantation and readily accepted Reemtsma's offer of a staff appointment as Assistant Professor of Surgery and director of the heart transplant program in 1982. The

Columbia Presbyterian Medical Center rapidly became the most active cardiac transplant center in the country.

On James Malm's retirement in 1990, Reemtsma appointed Rose as Chief of the Division of Cardiothoracic Surgery. Rose promptly reorganized the Division into Sections of Adult Cardiac, Pediatric Cardiac, General Thoracic, and Transplantation, and attracted new talent to each. The excellent balance of strengths within the Division combined with enhanced outreach efforts to surrounding communities led to rapid expansion throughout the 1990s. And as Rose's surgical focus gradually moved from transplantation to mechanical heart support, his leadership as an innovator and administrator became widely recognized throughout the surgical world. A tenured Professor of Surgery at Columbia at the age of 43, he was more than ready for a chairmanship.



Ventricular assist device (VAD).

Challenges

When Eric Rose assumed the Chairmanship of the Department of Surgery, his primary interest lay in the field of mechanical support for the failing heart, or VADs (ventricular assist devices). To make the time to concentrate on this important new field, he

planned to delegate most of the heart transplant work to others.

His administrative attentions were further directed to a number of other departmental challenges. A full-time expert in liver surgery and transplantation had to be recruited. The Plastic Surgical Service needed a new Director, and the leadership of the Breast Service had to be resolved. The age-old problem of faculty remuneration and how to establish a uniform full-time structure was prominent on his agenda. The growing challenge of training surgeons in the face of progressively restrictive legal regulations governing their independence in the operating room was a high priority. Decentralization of the department, in the form of establishing a number of semi-autonomous specialty centers, had been begun by Reemtsma, but needed a push. Rose was also intent on expanding the research program, and new sources of funding were necessary to support a vastly enlarged infrastructure.

Style of Leadership

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Eric Rose is personable, a good listener, accessible to his staff, and accepts advice when the interests of the Department are at stake. He is not a micro manager; he delegates major spheres of authority to his vice chairmen and his operational divisions. But everyone knows where the buck stops. His final word is firm and rarely controvertible.



Members of Dr. Rose's Cabinet May 2001. Seated from left: Theresa M. Larivee (CFO), Doctors Eric A. Rose and Kenneth A. Forde. Standing from left: Doctors Henry M. Spotnitz, John A. Chabot and Mark A. Hardy.

And in areas of dispute with other departments, with the administration, and with other hospitals, he can be a formidable contender.

Rose is adept at making use of modern business practices to improve operational efficiency, conserve resources, and strengthen the department's financial base. He is equally effective in gaining staff acceptance of the proposals. Substantive problems are handled by a team of professional management consultants. Monitored retreats are held frequently to allow for an exchange of opinions by the participants, often resulting in reconciliation of differences and resolution of the problem at hand. Such a forum is also used to clarify departmental goals and set operational policy.

Reorganization

Rose was the architect of a departmental "Statement of Purpose," citing the goals of his administration; it was endorsed without serious objection by his faculty. Shortly afterwards, "A Commitment to Partnership" was circulated to all staff members, which stressed the importance of courtesy and sensitivity in dealing with others. The concept of treating everyone in the health-care chain as "consumers" was also presented as an extension of the business model. These simple statements of intent and rules of behavior were accepted by all. To decentralize administrative responsibilities, Rose appointed a number of vice chairmen, each with a specific area of authority. Dr. Henry Spotnitz was charged with information technology and research and Dr. John Chabot with quality assurance, clinical care, and the operating rooms. Dr. Mark Hardy was charged with education and training, and Dr. Kenneth Forde with external affairs (marketing, outreach, and development). Theresa Larivee, having had extensive previous exposure to the members of the Department through her financial management of the operating rooms, was appointed Chief Financial Officer of the Department. This group of five made up the administrative cabinet, and they meet with the Chairman on a weekly basis. To increase efficiency, and further the goal of creating specialized Centers of Excellence, Rose established eight clinical and two research divisions. Each was empowered to define its own goals, evaluate its own progress and control its own financial assets. These divisions included Breast, Cardiothoracic, Pediatric, Plastic, Surgical Science, Vascular, InChoir (International Center for Health Outcomes and Innovative Research), and Liver Transplantation.

General Surgery at Allen Pavilion constituted a separate division, as did Surgical Specialties at Presbyterian Hospital, the latter consisting of four sub-divisions (colorectal, hepatobiliary, gastrointestinal, and thyroid). These last four sub-divisions became important centers for the teaching of students and house staff.

Rose initiated a decentralized billing system (each division did its own billing, but those records were subject to overview by the central business office), and enlarged the central office to a size capable of handling a departmental budget of over \$50 million. Clinical revenue approximates \$35 million, research grants bring in annually a minimum of \$5 million, and Hospital contributions for staff salaries total roughly \$7 million. Endowment income adds another \$2 million and perhaps twice that amount comes from contracts for management and services to other hospitals.

The system of faculty remuneration was made uniform throughout the Department. It currently consists of a base salary consistent with the University salary structure plus a percentage of fee income from clinical practice, the latter being determined by a formula designed by each division for its own members. A tithe of 10 percent of gross income is required of each faculty member by the Department, and 5 percent by the Medical School. Each division is expected to contribute an additional 5 percent of gross revenues to the Department, some of it to be returned to support divisional initiatives. These taxes, supplemented by income from the other sources mentioned above, have allowed Rose the freedom to enlarge the infrastructure of the Department substantially. If one includes faculty and house staff (together numbering over 100), there are over 300 individuals on the Departmental roster, including 70 laboratory assistants, 15 physician assistants, and the balance falling into technical and administrative support staff.

It is not surprising that the section on Informatics, under Dr. Spotnitz, has at its disposal 500 PCs, 100 printers, and a self-maintenance capability. Everyone in the Department is expected to be computer-literate. A wireless informational network notifies the



Vascular Division (standing from left): Doctors Roman Nowygrad, George J. Todd, Mark A. Hardy, Joseph A. Buda. (Seated): Doctors Alan I. Benvenisty, and Janet A. Prystowsky.

staff of scheduling changes and emergencies. These administrative innovations have brought operational efficiency to the Department and have resulted in savings necessary for the support of existing programs as well as seed money for new research ventures.

Teaching and Training

The Department of Surgery continues to attract bright and highly motivated house staff applicants. This is a reflection not only of its reputation as a cardiac and transplantation center, but perhaps more so because it also offers a relatively balanced training program that includes all the subdivisions of general surgery. The Residency remains a categorical five-year program, rectangular rather than pyramidal in structure (meaning that the five interns accepted into the full residency each year are carried forward through the entire training period without interruption). The "progressive



Dr. Ann Marie Schmidt succeeded Dr. David M. Stern (right) as Chief of Surgical Sciences Division.

responsibility" format of the Humphreys and Reemtsma programs has continued, but there have been some changes in content as the years have passed and new surgical fields have emerged. About half the graduates of the general program remain to take residencies or fellowships in cardiothoracic, vascular, or pediatric surgery, or to spend guaranteed time (one to three years) in the research laboratories of the Department under an NIH training grant. There is no mandatory research requirement, but exposure to the laboratories is strongly encouraged. All residents, in addition to their clinical training,

participate in the enlargement and improvement of the Departmental database, and four times a year report formally on service-specific clinical outcomes.

Rose clearly envisages more for his residents than a sound surgical education. He sees them as future leaders in the field, and he believes that their training should include measures to enhance their leadership capabilities. Professionalism, communication and management skills, and quality assurance measures are all included in their education, and the graduates of the Rose residency, almost without exception, opt for careers in academic surgery rather than practice in a community setting.

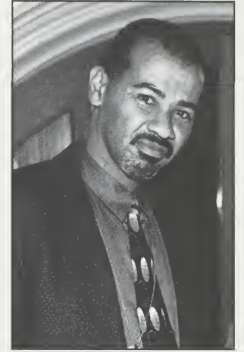
An important additional component of the general surgical

residency is the rotation, at both junior and senior levels, at the Allen Pavilion of CPMC in northern Manhattan, and at Overlook Hospital in Summit, New Jersey. Both offer a surgical experience quite different from that at the CPMC, which is essentially a tertiary care center. Allen Pavilion is a community-based urban institution, equipped for primary and secondary care. Resident teaching there is the responsibility of the Presbyterian surgical staff. Overlook provides exposure to a high-volume, high-quality suburban hospital practice. And hard as it is to believe, experience with trauma victims has been at a premium in Washington Heights in recent years, making a rotation on the emergency service at the Newark Beth Israel Hospital an attractive part of the assistant residency.

External regulations have mandated major changes in the organization and fabric of the residency training. The Bell Commission of the New York State Department of Health now strictly limits the number of consecutive and weekly hours that a resident may work. This is intended to minimize resident fatigue and address a quality of care issue. Sound as this change may be in theory, it has threatened the important concept of continuity of patient care and resident responsibility. More importantly, state and federal requirements for attending supervision of resident activity have become more stringent, and senior residents no longer have quasi-independent operating privileges. The attending in charge of the case is now required to supervise personally "the critical portions of the procedure," and the regulations mandate the presence in the operating room of the responsible attending for even the most minor procedures.



Dr. Jean C. Emond.

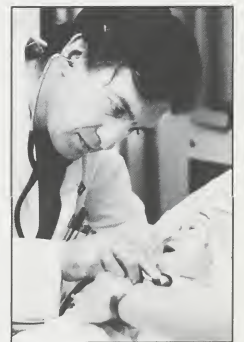


*Dr. Spencer E. Amory,
Chief, Allen Surgical
Associates.*

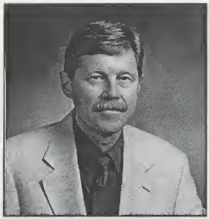
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New Programs and Appointments

Under Rose's leadership the Department of Surgery has maintained its dominant interests in transplantation and cardiovascular surgery. The appointment of Dr. Jean Emond as Director of the Liver Transplant division was a major boon—he had already achieved distinction in that field at the University of California in San Francisco. In his three years at Columbia, the adult and pediatric liver transplantation program has grown to be among the top five in the country. The heart transplant program was similarly strengthened by



Dr. Jan M. Quaegebeur.



Dr. Dennis L. Fowler.

A joint program between Presbyterian and New York Hospitals in the field of minimal access surgery has been initiated, led by Dr. Dennis Fowler who has full academic appointments at both medical schools. This program has received to date \$10 million in industrial support. Expanded applications of video-assisted techniques in both abdominal and thoracic surgery are underway, and there is virtually no structure in either cavity that has not been removed or repaired safely via the laparoscope or the thoracoscope. Aneurysms and certain cardiac abnormalities are now being targeted using minimal access techniques. The early results are promising.

the appointment of Dr. Niloo M. Edwards, and Rose made two further appointments to the Cardiothoracic Division, namely Drs. Ralph Mosca in Pediatric Cardiac Surgery (that Subdivision is led by Dr. Jan Quaegebeur, originally recruited by Rose and appointed by Reemtsma) and Michael Argenziano in the new field of robotics.

The management of end-stage organ failure (heart, lung, kidney, liver, intestine) commands much of the Department's attention. A recent multi-institutional study with Rose as the primary investigator comparing mechanical assistance to the use of drugs in the treatment of cardiac failure received much attention, largely because the results were so decisively in favor of the former. Previously regarded as a stop-gap measure pending the availability of a heart for transplantation, these mechanical pumps are proving to have longer lives than anticipated, and with further technological change may obviate the need for donor hearts. Clearly this is an exciting developing field.

The lung transplant program under the leadership of Dr. Joshua Sonett has enjoyed considerable success and is now being complemented by lung volume reduction surgery for selected patients with disabling emphysema. Dr. Mark E. Ginsberg and Dr. Kenneth M. Steinglass have been in charge of the latter.

A rising percentage of general surgical operations are done on a same day basis. This change is of course driven by hospital economics, but to the surprise of all, the program has been given favorable reviews by most of the involved patients. Those undergoing breast procedures, thyroid operations, herniorrhaphies and other less serious procedures are all being discharged home the same day. And many of the thyroid interventions are now performed under local anesthesia, thanks principally to Dr. Paul LoGerfo's work in this area.

The need for reliable, timely information related to research projects and administrative activities has been provided by the informatics database controlled by Henry Spotnitz. And to help in the design of new programs as well as in the critical assessment of the efficacy of on-going clinical programs, both for the medical community and for those who control resource allocation, InChoir, under the leadership of Annetine Gelijns, has been invaluable.

Dr. Rose is encouraging residents to take advantage of greatly expanded facilities and opportunities for basic research. The Surgical Research Laboratories, originally under David Stern's direction, is now led by Dr. Ann Marie Schmidt. An active inquiry into vascular biology has led to significant developments in alternative methods of anticoagulation as well as new understanding of mechanisms of

vascular injury. Studies of factors influencing wound healing and tumor growth are now underway.

Unfinished Business

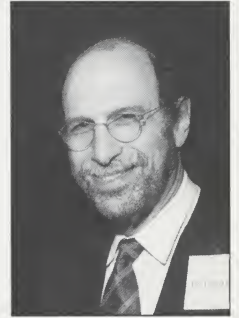
In the eight years of Eric Rose's leadership, most of his initial goals have been realized. The need for a specialist in liver surgery has been met. Leadership in the breast division was established; David Kinne, of renown at Memorial Hospital, served ably as its director, and was followed on his retirement by Freya Schnabel. The Plastic Surgery Division was stabilized through a joint appointment with New York Hospital in which Dr. Lloyd Hoffman of Cornell was named Division Chief for both campuses with Dr. Robert Grant as Columbia site director. And at long last, the Department of Surgery can claim uniformity in the way the faculty is remunerated, all attendings being supported partly by salary from the University and partly through practice fees. To get this program accepted by all was an enormous accomplishment on Rose's part. He plans to continue efforts to make the take-home pay between the various divisions more equitable; at present, earnings are driven by market demands, and the disparity between divisions is large enough to call for centrally imposed corrections.

Rose's goal of decentralizing authority by the creation of quasi-autonomous divisions, each concentrating on a different surgical specialty, is close to fulfillment.

A remaining and on-going problem, common to all academic institutions, is that of surgical training. Legal restrictions on duty hours for residents and resident independence in the operating room, while purporting to offer patients protection from inexperienced hands in teaching centers, may at the same time compromise the development of qualified and safe practitioners of surgery.

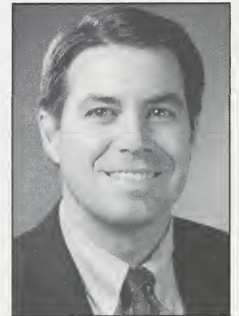
A Medical Marriage

A challenge confronting all branches of medicine lies in the organization of health care, driven as it is by the escalating costs of medical care and the continuously evolving systems of medical reimbursement. Few medical institutions have been able to survive the current economic burden without taking desperate measures to lower costs. More and more, hospitals (and even medical schools) have been forced to merge

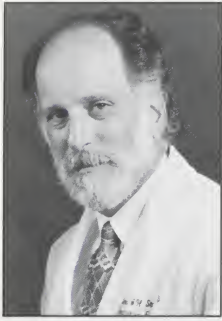


Dr. Lloyd A. Hoffman.

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Dr. Robert T. Grant.



Dr. Charles J. H. Stolar.

with other similar institutions to share facilities and programs and thus avoid duplication of costly activities.

The most notable of these was the merger of New York Hospital and Presbyterian Hospital on January 1, 1998, 70 years after the birth of the CPMC and 227 years after the founding by Jones and Bard of the original New York Hospital. The combined institution, the New York-Presbyterian Hospital, was the consequence of the marked rise in the cost of medical care. This union, the first of several such mergers in New York, was structured to effect operational economies by combining costly programs and by using the collective strengths of the combined institutions to increase their revenue-producing outreach activities.

The catchment area of the combined institutions is now enormous and can support a medical delivery system with its own underwriting capability. It consists of the combined health care networks of the two institutions (more than 30 such units in all) covering the five boroughs of New York City and parts of the adjacent New York and New Jersey counties. In addition, the two Surgical Services of the merged hospitals have already entered into joint programs with joint directors. The programs and directors of the combined services of the New York-Presbyterian Hospital are: Liver Transplantation (Dr. Jean C. Emond); Minimal Access Surgery (Dr. Dennis L. Fowler); Pediatric Surgery (Dr. Charles J. H. Stolar); Pediatric Cardiac Surgery (Dr. Jan M. Quaegebeur); Plastic Surgery (Dr. Lloyd A. Hoffman); and Vascular Surgery (Dr. K. Craig Kent). All these individuals have full academic appointments at both institutions.

Although the merger concept is an engaging one, its implementation demands innovation and administrative genius and a lot of give and take. Recognizing the existing institutional chauvinism, the traditional disparities in style and emphasis between the two institutions, and the logistical difficulties resulting from the geographical distance between them, the outcome of this union is by no means clear. However, if the adage that great opportunities arise in times of great change is valid, there are hopes for the future.

The problems of the Department of Surgery may appear small by comparison, but they are similar in context, and they are being approached with vision, purpose, and intelligence by the current chairman. Eric Rose is a man particularly well prepared for the challenges of this information-governed era. He has mastered some of the complexities of the currently available health care delivery systems and has turned them to advantages. And somehow his administrative energies and skills have allowed him to address both social and political

problems without sacrificing the traditional attentions to teaching, patient care, and research.

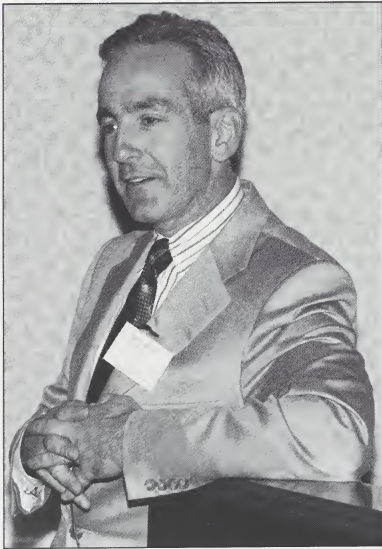
A Closing Note

Eric Rose deserves accolades for his on-going and successful administrative efforts to bring medicine into the new age, but what must never be forgotten are his extraordinary and amply demonstrated skills as a surgeon and his gifts of innovation. Nor should his patience and his perseverance in seeing projects through to completion be overlooked. The Department of Surgery is in remarkably capable hands.

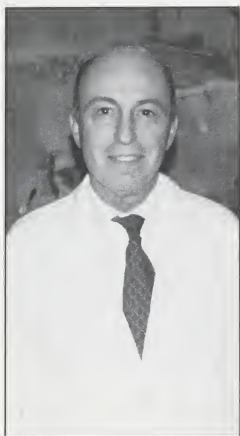
He speaks with unbridled enthusiasm of further worlds to conquer, some of them related only indirectly to surgery. He terms himself an "irrational optimist," but his performance to date can hardly justify the word "irrational." The use of marrow stem cell therapy in a number of degenerative and neoplastic conditions is of particular interest to Rose, as is the treatment of juvenile diabetes by

pancreatic islet cell transplantation. The further development of mechanical devices to supplant failing organ systems will remain in his focus, along with an expansion of the transplantation program. Finally, it is Rose's intent to make surgery easier and more palatable to the patient through the wider use of minimal access procedures, thus lessening the need for pain control measures and shortening the recovery phase.

It is an exciting prospect, and we wish Eric and the Department of Surgery every success as the new century unfolds.



Dr. Eric A. Rose.



Dr. Paul LoGerfo.



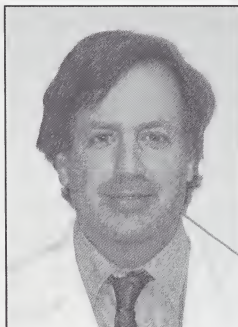
Dr. Freya R. Schnabel.



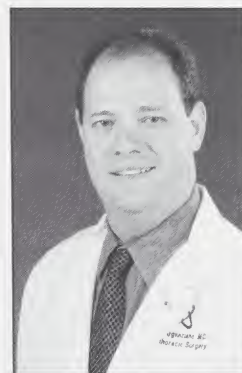
Thoracic section from left: Doctors Lyall A. Gorenstein, Mark E. Ginsburg, Joshua R. Sonett and Kenneth M. Steinglass, 2002.



Dr. Mark Hardy, Dr. David Stern, and Dr. David Kinne.



Dr. R. Lawrence Whelan.



Dr. Michael Argenziano.



Allen Surgical Associates from left: Doctors Peter L. Geller, Michael Treat and Spencer E. Amory, Surgical Director, 1998.



Flora Wang and the Robot FLORA II, named in her honor. Ms. Wang was brought here from Taiwan by Dr. George H. Humphreys II.

Concerns for the Future— An Editorial



Surgeon's hands manipulate robotic hands.

In the past half century, remarkable advances have been made in surgical science and practice and there is little question about the benefits that have accrued to the patient as a consequence. But these positive developments have been accompanied by some fundamental changes in the role of the surgeon, both in

professional training and in patient management. It is to these concerns that we address ourselves in this chapter.

John Jones, in his short but brilliant career, made clear what he thought a surgeon should be—a man of unquestionable motivation and broad education, technically skilled but sufficiently versed in medicine to assume responsibility for the total care of the patient. This idealized concept gradually became a reality in the late 19th century, and as the scope of surgery further expanded in the following century, surgeons not only performed virtually the entire spectrum of operative procedures with competence, but were also active in the pre- and post-operative care of the patient. Jones' ideal appeared fulfilled.

As surgical science and technology became more complex and sophisticated, however, it became apparent that no one individual could master the whole gamut of existing surgical procedures, and the "generalists" gradually became supplanted by specialists who restricted their interests and activities to more limited fields of surgery. This evolution was inevitable, and as predicted by Reemtsma, specialization not only facilitated advances in surgical science and practice, but also served the interests of the patient. The more experienced the surgeon in a particular area, the better the results.

But there was a price to be paid for such specialization. General surgery, the traditional center for the teaching of students and house staff, not only lost its pivotal role in education, but became difficult to define amidst the many specialty units. And those surgeons who

concentrated their activities to finely circumscribed fields soon found themselves ill-equipped to deal with problems beyond the bounds of their specialty. This poses a potentially serious problem in patient management. Lacking in-depth knowledge of one's patient may lead to errors in treatment choice, or even faulty responses to emergencies in the operating room.

Of greater concern is the growing depersonalization of surgery. Interaction between surgeon and patient, once an important ingredient of effective care, is disappearing. Shorter periods of hospitalization, "same-day" surgery, and fewer complications are clearly advantageous to the patient. But an undesirable result is the further curtailment of opportunities for personal exchange between doctor and patient. The listening, the reassuring word, the explanations of the surgery, and the day-to-day care, are being relegated to the internist, or the physician's assistant or nurse practitioner. Something of importance is being lost, both to the patient and the surgeon.

Is this concern over-stated? Perhaps. The benefits of surgery done by experienced specialists are impressive and may well outweigh the need for closer interaction between surgeon and patient. However, the not unrealistic possibility that the surgeon of the future may be restricted to a technical, impersonal, and adjunctive role in patient care, is difficult to accept. We are of the opinion that patients should have the benefits of both skilled and personalized care.

It is encouraging to learn that one of our earlier concerns, namely, education in surgery, is being addressed by Dr. Rose (see Epilogue). He has assigned a geographical entity in the Hospital to general surgery with its own beds and this is becoming a vitally important center in the Department for undergraduate and house staff teaching. It is our hope that the Surgical Specialties will once again have their residents taught the basic principles and techniques of surgery by the general surgery faculty. This was an important function of the Department in years past, and it should be resumed.

Surgical training also remains a matter of serious concern. What is frequently overlooked in the design of training programs is that the development of good habits in patient management is as important as the acquisition of technical skills. Residents must be given the freedom to think and function independently as their knowledge and experience widens, and thereby to acquire sound judgement. They must have the humility to seek help when help is needed. And they must recognize that the learning curve never ceases. These habits must become ingrained in the residents' DNA and forever guide their activities in

their future careers as surgeons. And they must be understood by those who establish the ground rules for surgical training.

In the programs established by Halsted, Whipple, and Humphreys, trainees were granted progressive independence in decision-making and operating room activities, with a corresponding decrease in attending supervision as their experience grew. Together, the attending and resident arrived at major decisions regarding treatment, and many of the operative procedures were performed by residents; initially, this was under close supervision, but there was less attending presence as trainees grew in judgement and operative skills. The residents thus became active, rather than passive, members of the surgical team, and inevitably they grew deeply involved in their patient's welfare. Better patient care resulted, as did the development of an excellent cadre of future surgeons.

An important safeguard for the patient was the fact that the resident was taught that asking for help was not a sign of weakness or insecurity, but rather a badge of maturity and responsibility. It is difficult to overstate its importance. Being able to seek help without reprisal or insult to personal pride, remained a constant in their subsequent careers.

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It was naturally of concern to us when the resident's independence came under attack. Given the understandable public concern in recent years over the issue of "Patient's Rights," it is not surprising that federal and state governments intervened with legislation ostensibly designed to protect the patient from inexperienced hands in the operating room and faulty judgements at the bedside from overworked and exhausted house officers. The working hours of residents have become strictly regulated, and close attending supervision of residents during surgery is now mandated, and strictly enforced.

These imposed regulations have potentially serious implications with regard to both the quality of patient care and the maturation of well-qualified surgeons for the future. Constant supervision of a surgical resident's participation in patient care eliminates the progressive responsibility factor that is so important to their training. Nor should the concept of continuity of care be compromised. For a resident to have to turn over the care of the patient to a colleague unfamiliar with that patient, at a specified mandated hour, invites trouble. This not only may bring harm to that patient, but this practice can be expected to develop into an accepted, albeit undesirable, form of patient management in the years to come. Adequate rest for the overworked resident is important, and restricting hospital duty of a

surgical resident to perhaps every third night is a reasonable step to take. Although strict hours for those working in emergency rooms and intensive care units is appropriate, some compromise must be reached regarding the “changing of the guard” in surgical training programs — time specifications must be relaxed if present and future calamities are to be avoided.

Fifty years have passed since our residency days. During this period the world of medicine has undergone enormous change, and with it the basic nature of our profession. What was important to us then may appear less significant now as the entire country struggles with the complexities of health care delivery, the escalating costs of medical care, and the difficulties in learning the new language of the informational and technical revolution. Physicians are concerned with bottom lines and efficiency experts, and are using business models to meet financial demands. These accommodations are necessary and we commend Eric Rose in the midst of these chaotic times for his skills in keeping the Department afloat financially as well as increasing its resources, in recruiting and maintaining an outstanding surgical team, and in addressing the concerns we have discussed. And we must hope that the public and regulatory agencies will also recognize the importance of these issues in the training of surgeons.

There are no easy answers to our concerns. Surgeons will continue to be educated and trained, even if it means a reversion to some form of apprentice-like system, and doctors will still have the welfare of their patients in mind, even at a distance. But there was a time when surgery was known as an art as well as a science, and although we applaud the gains in the science of surgery, we bemoan the fact that the art component is fading. Our hope is that it will not be lost.

Meanwhile, hardly a day passes without our giving thanks to Columbia, to the College of Physicians and Surgeons, to Presbyterian Hospital, and to our countless teachers, including the more senior residents under whom we served. They taught us the meaning of dedication and integrity, and they trained us well in surgical skills and patient care. We are proud that their legacy is still very much alive. And we are optimistic that the future of surgery at Columbia will be a continuum of its historic greatness, and that its surgical graduates will continue to bear the stamp of John Jones’ ideals.

— *Frederic P. Herter and Alfred Jaretzki III*

Epilogue

Since the completion of this manuscript there has been a major change in the organization and function of the Department. At the conclusion of a series of site visits to each division by the Chairman and his Cabinet, and after wide discussion with the surgical faculty as a whole, the decision was reached to replace the Division of Surgical Specialties with a Division of General Surgery, headed by Dr. John A. Chabot. This new division is comprised of a number of organ system-related groups (general, upper gastrointestinal, hepatobiliary, colorectal, endocrine and oncology, this last group being divided into subdivisions on breast, soft tissue and melanoma surgery).

With this reorganization there will inevitably be an overlap of interests and activities between sections requiring administrative attention, but programs such as "Minimal Access Surgery" and "Surgical Oncology," which involve several disciplines, will be easier to integrate within the central support structure of a new, single General Surgery Division. Of foremost importance, of course, is the resurrection of General Surgery as the pivotal center for the teaching of students and house staff. This welcome change addresses, at least in part, some of the concerns voiced by Drs. Herter and Jaretzki in the prior chapter.

Several further steps are indicated to strengthen and make workable this organizational development. These include:

- Making the presence of the General Surgery Division known to others outside the Department, including its function and accessibility.
- Developing an administrative structure which is consistent with those existing in other departments and specialty services within and outside the CPMC.
- Reorganizing of a curriculum to fulfill our responsibility for medical student education in general surgery.
- Establishing a mechanism for making faculty available in emergencies that do not fall into any particular subspecialty on presentation (i.e. acute abdominal problems).

— Dr. Kenneth A. Forde

Appendix

Senior academic appointments attained in the following surgical specialties by former residents.

GENERAL SURGERY

Amory, Spencer E.

Associate Clinical Professor of Surgery, Columbia University.

Appel, Michael F.

Associate Clinical Professor, Baylor University. Clinical Professor, Texas University.

Aufses, Arthur H., Jr.

Professor and Chairman, Department of Surgery, Mt. Sinai Medical Center.

Ballinger, Walter F.

Professor and Chairman, Department of Surgery, Washington University School of Medicine.

Britton, Richard C.

Chief of Surgical Service, Brooklyn Hospital, New York.

Buchwald, Henry

Professor of Surgery, University of Minnesota.

Buda, Joseph A.

Clinical Professor of Surgery, Columbia University.

Budd, Daniel C.

Associate Clinical Professor of Surgery, UMDNJ.

Caushaj, Philip Fillor

Professor and Vice Chairman, Department of Surgery, Temple University School of Medicine.

Chabot, John A.

Associate Professor of Clinical Surgery, Columbia University.

Chodoff, Mark E.

Clinical Associate Professor of Surgery, University of Rochester.

Cohen, Jeffrey I.

Associate Professor of Surgery, University of Connecticut.

Cohen, Roger D.

Associate Professor of Surgery, Medical College of Louisiana.

Collins, John A.

Professor and Chairman, Department of Surgery, Stanford University Medical School; holder of the Chidester Endowed Chair.

Duke, James R. Jr.

Professor of Surgery, Texas University Medical School.

Elliott, Daniel W.

Chairman, Department of Surgery, Wright State University, Dayton, Ohio.

Estabrook, Alison

Professor of Clinical Surgery, Columbia University.

Ferrer, José M.

Professor and Chief of Surgery, Harlem Hospital, New York.

Feind, Carl R.

Clinical Professor of Surgery, Columbia University.

Fitzpatrick, Hugh F.

Professor of Surgery, Columbia University.

Forde, Kenneth A.

Ferrer Professor of Surgery, Columbia University.

Geller, Peter L.

Associate Clinical Professor of Surgery, Columbia University.

Gongawara, Robert D.

Clinical Professor of Surgery, Mercer (Savannah).

Gore, Donald O.

Professor and Chairman, Department of Surgery, University of the West Indies.

Guillem, José, G.

Associate Professor of Surgery, Weill Cornell Medical College.

Gump, Frank E.

Professor of Surgery, Columbia University.

Habif, David V.

Milstein Professor of Surgery, Columbia University.

Hechtman, Herbert B.

Professor of Surgery, Peter Bent Brighton Hospital, Harvard University.

Herter, Frederic P.

Auchincloss Professor of Surgery, Columbia University.

Kawamoto, Henry K. Jr.

Clinical Professor of Plastic Surgery, UCLA School of Medicine.

Kinne, David W.

Habif Professor of Surgery, Columbia University.

Koontz, Paul G. Jr.

Clinical Professor of Surgery, University of Missouri, Kansas City School of Medicine.

Levin, Sheldon M.

Professor of Surgery, UCSF.

LoGerfo, Paul

Habif Professor of Surgery, Columbia University.

Magill, Thomas G.

Clinical Professor of Surgery, Tufts University.

Mattson-Gates, Gail F.

Associate Clinical Professor of Surgery, University of Southern California.

McCullough, William B.

Associate Clinical Professor of Surgery, Yale University.

Moulton, Anthony L.

Clinical Professor of Surgery, Brown University.

Olson, John E.

Clinical Professor of Surgery, Columbia University.

Oluwole, Soji F.

Professor of Surgery, Columbia University.

Price, John B. Jr.

Professor of Surgery, Columbia University.

Randall, Frederick R.

Associate Professor of Clinical Surgery, Columbia University.

Randall, Henry T.

Professor and Chairman, Department of Surgery, Brown University.

Reemtsma, Keith

Valentine Mott/Johnson and Johnson Professor and Chairman, Department of Surgery, Columbia University.

Rogers, J. Beall

Associate Clinical Professor of Surgery, Columbia University.

Rubin, Jeffrey F.

Clinical Professor of Surgery, University of Connecticut Health Center.

Schwartz, Gordon F.

Professor of Surgery, Jefferson Medical College, Philadelphia.

Simmons, Richard L.

George Vance Professor and Chairman, Department of Surgery, University of Pittsburgh.

Soroff, Harry S.

Professor of Surgery, Stony Brook School of Medicine, New York.

Vargas, Lester L.

Professor and Chairman, Department of Surgery, Brown University.

Volk, Herbert

Clinical Professor of Surgery, Albert Einstein College of Medicine.

Wangansteen, Stephen L.

Professor and Chairman, Department of Surgery, University of South Florida, Tampa.

Weber, Colin J.

Professor of Surgery, Emory University School of Medicine.

Weidel, Philip D.

Associate Clinical Professor of Surgery, Columbia University.

Weil, Peter H.

Professor of Surgery, SUNY, Stony Brook, New York.

Weil, Richard III

Professor of Surgery, Associate Dean of Medicine, Brown University, School of Medicine, Providence.

Whelan, Richard Lawrence

Associate Professor of Surgery, Columbia University.

Zikria, Bashir A.

Clinical Professor of Surgery, Columbia University.

C A R D I O T H O R A C I C S U R G E R Y

Bloch, Jack H.

Professor of Surgery, Kern Medical Center, University of California, San Diego.

Blumenstock, David

Professor of Surgery, Columbia University.

Bowman, Frederick O. Jr.

Professor of Clinical Surgery, Columbia University.

Bregman, David

Associate Clinical Professor of Surgery, Columbia University.

Connolly, John E.

Professor of Surgery, University of California at Irvine.

Edie, Richard N.

Associate Professor of Surgery, Jefferson University, Philadelphia.

Gerst, Paul H.

Professor of Surgery, Albert Einstein School of Medicine.

Haasler, George B.

Associate Professor of Surgery, Medical College of Wisconsin.

Jaretzki, Alfred III

Associate Professor of Clinical Surgery, Columbia University.

Kaiser, Gerard A.

Clinical Professor of Surgery, University of Miami, Dean, Clinical Affairs.

King, Thomas C.

Ferrer Professor of Surgery, Columbia University.

Lazar, Harold L.

Professor of Surgery, Boston University Medical Center, Boston, MA.

Lee, Arthur B.

Professor of Surgery, Moorehouse School of Medicine.

Malm, James R.

Professor of Surgery, Columbia University.

Marrin, Charles A. S.

Associate Professor of Surgery, Dartmouth.

Michler, Robert E.

Professor of Surgery, Ohio State University.

Norman, John C.

Professor and Chairman of the Department of Surgery, Marshall University School of Medicine, Huntington, West Virginia.

Oz, Mehmet C.

Professor of Surgery, Columbia University.

Rose, Eric A.

Valentine Mott Professor of Surgery/Milstein /Johnson and Johnson Professor and Chairman, Department of Surgery, Columbia University.

Rousselot, Louis M.

Professor of Clinical Surgery, New York University Medical Center.

Singh, Arun K.

Clinical Professor of Surgery, Brown University.

Spotnitz, Henry M.

Humphreys Professor of Surgery, Columbia University.

Spotnitz, William D.

Associate Professor of Surgery, University of Virginia.

Starr, Albert

Professor of Surgery, University of Oregon.

Steinglass, Kenneth M.

Clinical Professor of Surgery, Columbia University.

Thal, Alan P.

Clinical Professor of Surgery, University of Miami.

Thomson, Norman B. Jr.

Clinical Professor of Surgery, SUNY, Stony Brook.

Thurer, Richard J.

Professor of Surgery, University of Miami.

Wichern, Walter A.

Professor of Surgery, Columbia University.

Zorn, George L. Jr.

Associate Professor of Surgery, University of Alabama School of Medicine.

P E D I A T R I C S U R G E R Y

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Amoury, Raymond A.

Professor and Surgeon in Chief, Children's Mercy Hospital, University of Missouri.

Asch, Morris J.

Clinical Professor of Surgery, UCLA.

Barlow, Barbara A.

Professor of Surgery, Columbia University.

Bishop, Harry C.

Professor of Surgery, University of Pennsylvania.

Dillon, Peter W.

Professor of Surgery and Vice Chairman, Department of Surgery, Pennsylvania State University.

Exelby, Philip R.

Chief of Pediatric Surgery, Memorial Sloan-Kettering Cancer Center.

Ginsburg, Howard B.

Associate Professor of Surgery, New York University.

Miller, Barnett M.

Associate Professor of Surgery, Albert Einstein College of Medicine.

Mollitt, Daniel L.

Professor of Surgery, University of Florida, Jacksonville.

Pulito, Andrew R.

Professor of Surgery, University of Kentucky.

Schullinger, John N.

Clinical Professor of Surgery, Columbia University.

Shaw, Anthony

Professor of Surgery, UCLA.

Silen, Mark

Professor of Surgery, University of Oregon (Portland).

Stylianios, Steven

Associate Professor of Clinical Surgery, Columbia University.

Touloukian, Robert J.

Professor of Surgery and Pediatrics, Yale School of Medicine.

Tracy, Thomas F.

Professor of Surgery, Brown University.

P L A S T I C S U R G E R Y

Cinelli, Peter B.

Associate Clinical Professor of Surgery, Columbia University.

Coleman, Claude C. Jr.

Clinical Professor of Surgery, Medical College of Virginia.

Dellon, A. L.

Associate Professor of Surgery, John Hopkins University.

Edgerton, Bradford W.

Associate Clinical Professor of Surgery, University of Southern California.

Hoehn, Robert J.

Clinical Professor of Surgery, University of Colorado Health Science Center.

Koss, Neal

Associate Clinical Professor of Surgery, UCLA School of Medicine.

McCarthy, Joseph G.

Lawrence Bell Professor of Surgery, New York University Medical Center.

Rogers, Blair O.

Clinical Professor of Surgery, New York University Medical Center.

Spinelli, Henry M.

Associate Professor of Surgery, Weill Cornell University.

Sultan, Mark R.

Associate Clinical Professor, Columbia University.

Tanzer, Radford C.

Clinical Professor of Surgery, Dartmouth.

Weatherley-White, Roy C.

Associate Clinical Professor of Surgery, University of Colorado School of Medicine.

V A S C U L A R S U R G E R Y

Badder, Elliot M.

Associate Professor of Surgery, University of Maryland.

Benvenisty, Alan I.

Professor of Clinical Surgery, Columbia University.

Bethea, Morrison C.

Associate Clinical Professor of Surgery, (Cardiothoracic & Vascular)
LA State.

Chandler, James G.

Clinical Professor of Surgery, University of Colorado. Associate Clinical Professor of Surgery, University of California at Irvine.

Greisler, Howard P.

Professor of Surgery, Loyola University.

Gusberg, Richard J.

Professor of Surgery, Yale University School of Medicine.

Imparato, Anthony M.

Professor of Surgery, New York University.

Jacobson, Julius H.

Professor of Surgery, Mt. Sinai School of Medicine.

Lawrence, Peter F.

Professor of Surgery, University of Utah School of Medicine.

Nowygrad, Roman

Professor of Surgery, Columbia University.

Smith, Robert B. III

John E. Skandalakis Professor of Surgery, Emory University.

Todd, George J.

Wichern Professor of Clinical Surgery, Columbia University.

Voorhees, Arthur B. Jr.

Professor of Clinical Surgery, Columbia University.

Whittemore, Anthony D.

Professor of Surgery, Harvard University.

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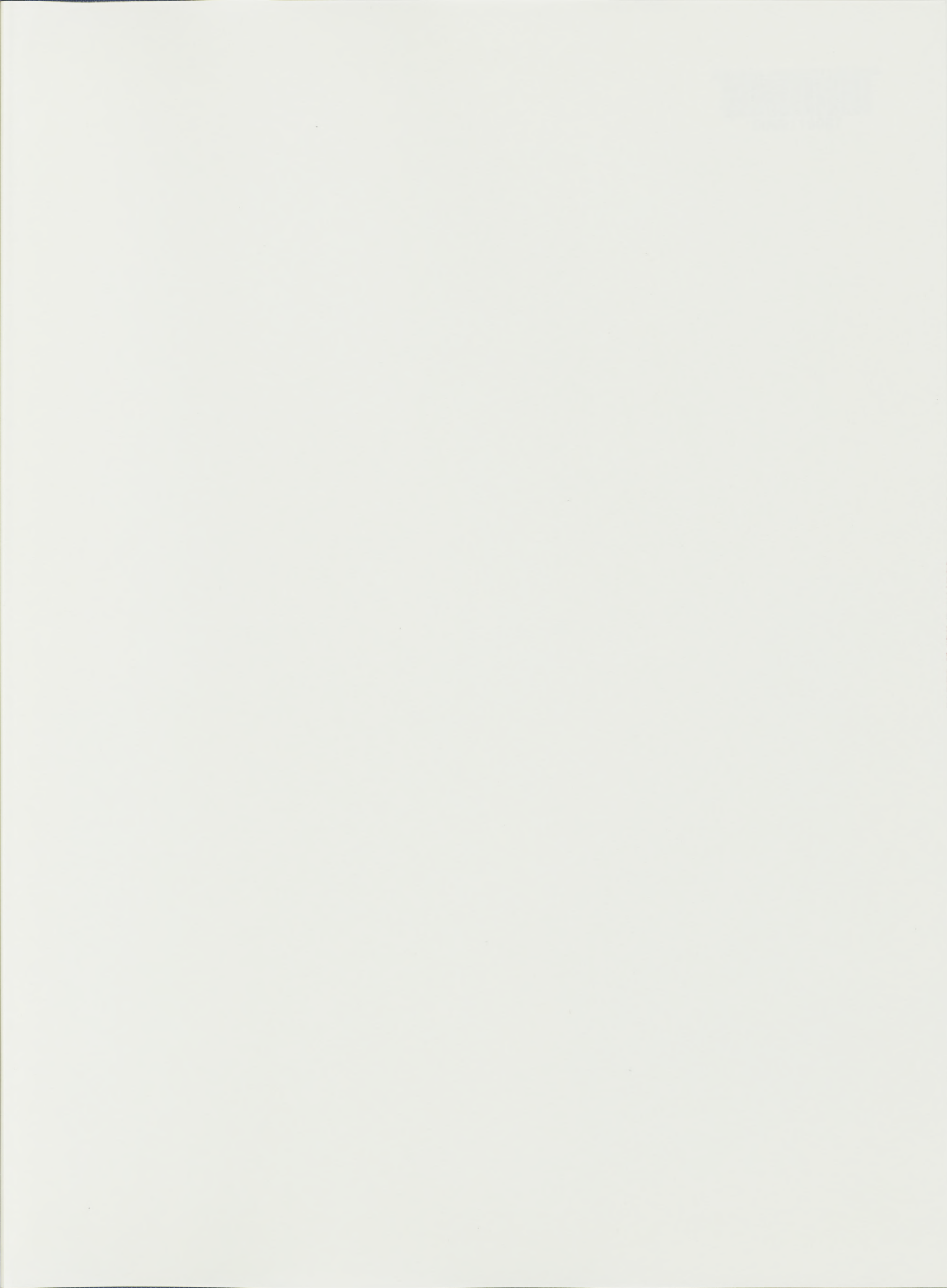
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